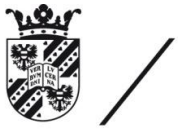
Scaffolding and Cooperative Learning

Effects on Reading Comprehension and Vocabulary Knowledge in English as a Foreign Language

Sri Wachyunni



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Effects on Reading Comprehension and Vocabulary Knowledge in English as a Foreign Language

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By

Sri Wachyunni

born on 9 December 1970
in Jambi, Indonesia

Supervisor
Prof. dr. M.H. Verspoor
Prof. dr. B.P.M. Creemers

Assessment committee
Prof. dr. C.M. de Glopper
Prof. dr. W.J.C.M. van de Grift
Prof. dr. M.P.C. van der Werf

for azza and ayah

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Chapter 1

Introduction

1.1 Rationale of the study

During the period of Dutch colonialism, English began to be taught as a foreign language to Indonesian privileged students at junior high schools (Lauder, 2008). This introduction eventually led to English becoming a compulsory subject from secondary school to university level, as it is now. It is even introduced at some primary schools to provide more opportunity to learn and practice English. Moreover, some junior and senior high schools have bilingual classes, where English is used as a medium of instruction. As suggested by the *Law of National Education System* No. 20 (UUSPN, Article 50(3), 2003), the government and/or the local government are required to set up at least one international standard school (ISS) at all levels, which uses English as a medium of instruction. All of these recent developments show that EFL has become very important in the Indonesian educational setting.

Nevertheless, this importance of English is not reflected in the students' English proficiency. Lengkanawati (2004) indicates that the Indonesian students' proficiency in English is still unsatisfactory at both secondary and tertiary levels. Harjono and Wachyunni (2011) report similar results in that the English proficiency of university students is very limited, despite the fact that they learned English at junior and senior high school for six years with a minimum of four times forty-five minutes per week. The primary causes are assumed to be the lack of input or exposure to authentic English; the lack of willingness of the students to practice their English; the lack of motivation; and the lack of a positive attitude towards English as foreign language. Even among policy makers and some Indonesian scholars there is ambivalence towards English, especially with regards to the frightening, culturally "negative-effect" of English on the one hand, and the desire to take advantage of English for the benefit of national development on the other hand (Lauder, 2008). These are some possible factors that may inhibit the development of the students' English

proficiency. This dissertation does not deal directly with these factors, but rather wants to investigate how to improve the proficiency of university students majoring in academic English.

One area that may need extra attention in EFL at university level is reading. Grabe and Stoller (2002) argue that the students' ability in text comprehension is the key to success in academic achievement. The importance of reading skills becomes even more obvious when students start their study at the university level and are asked to read books, journals, and articles – mostly written in English – so that they can write their papers. If they do not have good reading skills, they will have difficulty comprehending the message and deriving knowledge and information from those sources. This will have an impact on their study. Therefore, the main reading skill that needs to be mastered by college students is related to comprehension of the text. Comprehension in this sense is comprised of getting the main ideas from the text, making inferences, predicting, and summarizing (Snow, 2002; Myers & Palmer, 2002).

For this reason, I would like to find strategies to help students develop their reading skills. This is certainly reasonable, because the primary purpose of learning English at university is for them to be able to access knowledge and information written in English, or at the very least to master the skills to comprehend the genre of academic texts. Also, it is expected that, once the students have developed adequate reading skills, they may develop other language skills such as academic writing.

There have been some studies on teaching and learning strategies in the context of EFL, aimed at improving the students' reading skills, which enable them to comprehend what they read. Some studies, such as Attarzadeh (2011), Poorahmadi (2009), Pishghadam and Ghadiri (2011), and Safadi and Rababah (2012) examine the use of scaffolding in the teaching of reading in an EFL context. The results show that there is a significant effect of scaffolding in improving the scores of reading comprehension. As such, the studies conclude that teaching reading skills in the EFL classroom, using scaffolding, can improve the quality of the process and the outcomes of reading comprehension.

Turning to the context of cooperative learning, Stockdale and Williams (2004) show that cooperative learning significantly affects the lower ability students, while only having a minimal effect on the higher ability students. Some of the studies on cooperative learning context, such as Jalilifar (2010),

Cheng and Warren (2000), Veenman, Van Benthum, Bootsma, Van Dieren, and Van der Kemp (2002), Law (2010), and Johnson, Johnson and Holubec (2004), demonstrate positive effects of cooperative learning in promoting better achievement in affective, cognitive, and academic skills. However, other studies reveal that cooperative learning has no significant effect on reading comprehension and vocabulary achievement (Bejarano, 1987; Shaaban, 2006). Vocabulary achievement or gain in this sense indicates the number of vocabulary items that can be retained by students. These mixed findings suggest complexities of the reading comprehension process in the cooperative learning context of the EFL. Therefore, I will also consider other variables that may influence reading and vocabulary achievement. For example, Ghaith and Bouzeineddine (2003), Alharbi (2011), and Suhendan and Aksu (2014) demonstrate that students' achievement in reading comprehension is related to attitude factors in a cooperative learning condition.

Based on the findings from previous studies, the current study will investigate the effect of scaffolding on reading comprehension and vocabulary retention in different learning conditions: cooperative learning and individual learning. Vocabulary gain is included on the assumption that through reading activities students also acquire vocabulary. Within the realm of cooperative learning, I will also investigate the role of the students' ability and attitude in relation to reading comprehension and vocabulary gain. Finally, I will investigate whether the effects differ among students of different abilities.

1.2 Purpose of the study

The primary purpose of this study is to examine the effect of two different strategies to improve reading comprehension and vocabulary knowledge in university students: cooperative learning and scaffolding. In addition, the differential effect of scaffolding will be examined to see the effectiveness of this strategy in improving reading comprehension and vocabulary gain for lower and higher ability students. The strategies and effects will be examined by means of two longitudinal experiments, with the results being assessed by comparing the means of three groups of students at the English study program of the Faculty of Teacher Training and Education at Jambi University, Indonesia. In addition, within the cooperative learning groups the study will examine both the relationship between attitude towards group work (ATGW),

reading comprehension, and vocabulary gain; the effect of individual contribution to the group (individual accountability); and group processing in relation to reading comprehension and vocabulary gain.

The findings of this study may be useful to EFL teachers in selecting the most appropriate methods in enhancing the students' learning process of English reading comprehension and vocabulary acquisition. Furthermore, the study may provide some preliminary findings for further studies in the future.

1.3 Research question

Scaffolding can take place at the individual, small group, or large group level. In the current study, I will compare the effect of scaffolding at the individual and small group levels, with the students working individually and cooperatively. To summarize, the questions are: (1) Does scaffolding in a cooperative and individual learning condition have an effect on reading comprehension and vocabulary retention of university students? (2) Do students of lower ability benefit more from the various treatments than students of higher ability? (3) Is there a relationship between ATGW, reading comprehension, and vocabulary gain? (4) Is there a relationship between individual accountability, group processing, reading comprehension, and vocabulary gain? (5) Which is the best predictor for reading comprehension and vocabulary gain: individual accountability or group processing within a group?

The assumption is that in scaffolding a teacher is able to assist learners in improving their knowledge and cognitive skills. On the whole, previous studies on scaffolding found positive effects of this strategy in improving students' achievement. However, the success was dependent on contextual factors, such as different types of scaffolding (task support or teacher support), the degree to which scaffolding was implemented, the ability level of students, and the difficulty of the task. As Donovan and Smolkin (2002) point out, the more complicated a task is and the lower ability of students is, the more support of scaffolding is needed. Since the texts used in the current study are fairly difficult and the participants have a rather low proficiency in reading comprehension, they will probably need scaffolding to be able to understand the text.

1.4 Outline

The current chapter includes the rationale of the study, the purpose of the study, and the research questions. Chapter 2 comprises the literature review and reports on related empirical studies on reading comprehension and vocabulary knowledge in the EFL context, scaffolding and cooperative learning, and attitude towards group work. Chapters 3, 4, and 5 present studies 1, 2, and 3. Study 1 is a preliminary longitudinal study in which the procedures and materials were tested. Study 2 is the main longitudinal study in which the procedures from Study 1 were adapted somewhat to allow for more training on cooperative learning. Study 3 uses the data of Study 2 and explores to what extent group dynamics may play a role in the cooperative learning environment. Chapter 6 presents the discussion, wherein a summary of the study and the current results are linked to the literature and previous findings. Chapter 7 presents the conclusion, which includes pedagogical implications, limitations, and suggestions for further research.

Chapter 2

Review of Literature

2.1 Reading comprehension

Reading is one of the most important skills to promote academic accomplishment in both L1 and L2 learning environments (Schmitt, Jiang, & Grabe, 2011). Especially in higher education institutions, such as universities or colleges, reading is an essential skill that must be mastered by students, as most of the knowledge learned at university comes from reading the required and additional texts in the students' fields of interest. In addition, most of the literature available for college students is written in English. Therefore, students need to have good reading skills. From this point of view, it is reasonable to argue that the academic success of college students is determined by their reading comprehension skills.

In order to develop reading comprehension skills, readers need to be aware of the essence of reading as an interactive process in constructing meaning from a text. In an EFL context, Cogmen and Saracaloglu (2009) found that college students, when using reading comprehension skills, demonstrate an effective reading process. Vocabulary is especially important to the reading process: in order to comprehend a text, a reader must have sufficient vocabulary knowledge (e.g. Aarnoutse & Leeuwe, 1998; Joshi, 2005). Moreover, Grabe (1991) suggests that lexical knowledge is an important predictor of reading ability and Schmitt, Jiang, and Grabe (2011) suggest that L2 learners must have mastered the meaning of at least 95% of words of the text in order to successfully read a text. However, it does not necessarily mean that to understand a text, the readers must have learned the meanings of all the vocabulary used in that text. Sometimes the meaning of the words has to be inferred from the context, which is in line with Krashen's hypothesis that people acquire vocabulary best through comprehensible input (Krashen, 1982). In short, there is a close relationship between reading and vocabulary acquisition. In other words, reading

comprehension should be viewed as an interactive process, where context and vocabulary interact.

2.1.1 Reading comprehension as an interactive process

The theory of reading has changed from a rather linear view to a more complex one. Previously, based on behaviourist principles, reading was seen as "a perceptual activity in which the reader has a role as a passive recipient who has to find information from text" (Alexander & Fox, 2004: 33-68). From this perspective, meaning exists in the text and the reader has to reproduce it to understand its meaning. In other words, reading is a process to decode written symbols to get meaning from the text. This process is well known as the '*bottom-up*' view of reading (McCarthy, 1999).

Recently, a dynamic and interactive view of reading (the *top-down model)* has become more accepted. In this view, the definition of reading also considers other factors such as cognitive and meta-cognitive ability, the reading process, strategies, motivation, background knowledge, and socio-psychology. Dole, Duffy, Roehler, and Pearson (1991) conclude that reading is an interactive and constructive process of comprehension and Grabe (1991) states that reading is about comprehension and that readers have the freedom to choose appropriate strategies of reading. Grabe (1991: 378) also contends that reading is "a purposeful activity", meaning that a reader always has an objective when reading, whether it is for leisure, information, research, or study. In this sense, readers use their background knowledge and contextual clues within the text to construct meaning. Thus, comprehension is a result of the interactive process between reader, text, and context in which the readers not only receive messages from the text word for word, but also interpret the meaning of the text based on their prior knowledge. Therefore, how far and how deep readers are able to comprehend meaning within a text depends on their existing knowledge. In this vein, Dole et al. (1991) believe that when reading a familiar text, a beginner can become an expert, while conversely an expert can become a beginner when reading a text about an unfamiliar topic.

In line with this complex view of reading, Alyousef (2006) holds that reading as an interactive process leads to automaticity or reading fluency. Aarnoutse and Leeuwe (1998) point out that reading is a very active process affected by complex interactions between content and the text itself, the reader's prior knowledge and goals, and various cognitive and meta-cognitive

processes. This means that there is a dynamic interaction between reader and text. In this process, the reader constructs meaning from the text based on both background knowledge and the knowledge gained from the text. In doing so, the reader needs to have cognitive skills related to reading comprehension skills, such as guessing meaning, interpreting, making inferences, and summarizing.

Rapp and van den Broek (2005: 276) describe reading comprehension as "an ongoing process involving fluctuations in the activation of concepts as the reader proceeds through the text, resulting in a gradually emerging interpretation of the material". They believe that the comprehension of text is strongly influenced by characteristics of both readers and the text, which are primarily related to the readers' background knowledge and the genre of the text. In this process, the readers interact dynamically with the text to comprehend the text based on their background knowledge. In addition, as stated by Silberstein (1994) and Pressley and Afflerbach (1995), reading is a very active process in which the process itself is affected by various interactions between the reader, the text, the context, and various cognitive and meta-cognitive processes. At this point, the readers interact actively with the text to create meaningful interpretations concerning the content. In doing so, the readers, through cognitive processing, thus identify and predict the content of the text based on their background knowledge. Therefore, the interpretation of a text is constructed by the readers through intensive interaction with the text.

More specifically, related to the process of reading, Snow (2002: xiii) clarifies that reading comprehension is "the process of simultaneously extracting and constructing meaning through interaction and involvement with written language." Essentially, the readers comprehend a text if they can construct or predict the meaning of it. Two important indicators of comprehension are finding the main idea and making inferences. In this sense, the readers' ability to extract the main topic of the text as well as the supporting ideas related to the topic is an important factor in text comprehension. The readers' ability to make inferences can be seen from their competence in making conclusions or judgments based on the information available in a paragraph or passage of the text.

To summarize, the paradigm shift of viewing reading as a top-down model instead of a bottom-up one has implications in viewing reading as an active, interactive, productive, and more dynamic activity in constructing meaning

from a text. In other words, reading is not a perceptual and passive activity to get information from a text, but rather a productive and active activity to give meaning to or to construct meaning from a text.

Therefore, in the current study reading is defined as a productive interaction between reader and text, guided by scaffolding questions that help to construct meaning by interpreting, analyzing, and answering the questions related to the text. In doing so, the reader needs to be supported by sufficient vocabulary and background knowledge, and has to be introduced to the topic of a given text when necessary.

2.1.2 Reading comprehension in an EFL context

Reading comprehension in the L2 is often seen as similar to reading in the L1, if the level of L2 proficiency is adequate for the task. Weir (1993) argues that reading could be seen as a discerning process between reader and text, involving the reader's background knowledge and a wide range of language knowledge in order to comprehend the text. In this case, readers activate their knowledge to predict and interpret the text they read, rather than reading all the words within the text. Therefore, the readers play an important role in constructing meaning related to the text.

From a cognitive view, Roe, Smith, and Burns (2005) believe that reading is a complicated activity involving many variables related to reader, textual, and contextual aspects. In this sense, reading is not only a receptive activity to collect information, but also an interactive activity to interpret, analyze, and predict meaning from the text (Myers & Palmer, 2002).

In an EFL reading activity, we may assume that comprehensible input from the text has a powerful effect on improving students' comprehension. In this sense, more comprehensible vocabulary in the text will make it easier to be comprehended by readers. However, what is comprehensible input for one reader may be partially or totally incomprehensible for others.

In line with the views just presented, the current study will consider and characterize reading comprehension as a dynamic productive activity process that aims to understand, analyse, predict, and interpret the meaning of the text in order to arrive at comprehension. The reader is an active participant who has a central role as an interpreter of the text. To achieve comprehension, the reader reconstructs the meaning of the text based on his or her knowledge, experience,

interest, and reading goals. As a result, the meaning of the text will be different from one reader to another. Therefore, I assume that although students encounter the same input from the texts, they will achieve different levels of comprehension and gains in vocabulary.

2.1.3 Reading comprehension strategies

Lems, Miller, and Soro (2010) argue that reading comprehension requires the use of strategies before, during, and after reading. Strategies can be defined as a purposeful activity that readers take to construct and enhance their comprehension (Jimenez, Garcia, & Pearson, 1996; Pritchard & O'Hara, 2008). Therefore, a reading comprehension strategy is seen as "a cognitive or behavioral action that is enacted under particular contextual conditions, with the goal of improving some aspect of comprehension" (Graesser, 2007: 6). As people learn to read in the first language, they use particular strategies in reading for specific purposes. Once they know how to activate and effectively use a set of strategies, they can apply them to new texts and new tasks. This assumption is part of the studies conducted in this dissertation.

Adler (2001) defines reading comprehension strategies as conscious plans consisting of sets of procedures used by readers to make sense of a text. It is argued that knowledge about reading strategies can assist readers in monitoring their reading activity, relying on their own speed and purposes. Furthermore, based on empirical evidence in the field, Adler (2001) proposes at least seven strategies to improve text comprehension: (1) monitoring comprehension, (2) applying meta-cognitive strategies, (3) answering questions, (4) generating questions, (5) applying a graphic and semantic organizer, (6) recognizing text structure, and (7) summarizing. Of these strategies, four -- monitoring, answering questions, generating questions, and summarizing -- are used explicitly in the present study in the form of scaffolding questions and will be discussed in more detail.

First, monitoring comprehension helps the reader to understand what part of the text they can and can't understand. McNamara (2007) points out that readers monitor their comprehension by employing such strategies as asking questions related to text understanding and marking difficult passages of text that may make comprehension fail. Questions can be generated before reading, while reading, and after reading. Before reading, students use their prior

knowledge to predict and think about what the topic of the text may be, what the main idea can be, how the text will be organized, what type of text it may be, if there are possibly any unfamiliar words that they may not understand, and what the conclusion of the text may be. During reading, students can evaluate the questions they asked before reading to see if they were right. At this stage they ensure if their prior knowledge is compatible with the text they read. In this vein, Brantmeier, Callender and McDaniel (2011) believe that answering questions during reading can be used as milestones to improve comprehension of the text. In this sense, asking questions while reading can be used to monitor and gradually improve comprehension of all the passages of the text. Moreover, questions generated after reading can be used to verify whether or not the content of the text was comprehensible to the reader. In other words, questions after reading can be used as feedback to monitor comprehension. Therefore, monitoring comprehension is considered to be an important strategy to measure how far and how deep readers were able to comprehend the text. By doing this, readers may have enough time to explicitly ensure their understanding while and after reading. This strategy plays an important role in text comprehension at all levels and stages of reading. Therefore, the current study employs such a strategy.

Second, answering questions can be effective as a strategy because it gives readers clearer objectives of reading, focuses the readers' attention in relation to the topic of the text, assists them to think actively and creatively, engages them to monitor their comprehension, and helps them to review the content of the text and to relate to what they have learned using their background knowledge. Therefore, this strategy is applied in the present study in the form of scaffolding questions.

Thirdly, readers can also generate their own questions to get important information from the text (Beck & McKeown, 2001). McNamara (2007) proposes that generating questions can take on multiple forms and can serve multiple purposes. Readers can generate questions about the text before, during, and after reading the text. Questions generated before reading help to activate prior knowledge and serve as a guide for checking for information that readers do not understand. Questions generated during and after reading can serve as a form of self-testing to assess readers' comprehension. In the current study, the scaffolding questions are meant to activate prior knowledge and questions

during reading serve as guides to check understanding. The idea is that through modeling learners will transfer such questions to their own independent reading.

The last strategy is summarizing the text in which readers identify the main ideas of the text and relate them to supporting ideas and other main ideas from each paragraph, while eliminating unnecessary information, and, most importantly, enhancing their comprehension of the text. In the current study, summarizing strategies are also integrated in the scaffolding questions on the worksheets.

To sum up, based on the strategies in improving comprehension I assume that monitoring comprehension, generating questions and answering questions while reading and summarizing can be regarded as scaffolding tools for students in obtaining comprehension.

2.1.4 Empirical studies on reading comprehension strategy

Several scholars have shown that strategies can be taught to learners and can improve learners' reading comprehension. In relation to enhancing reading comprehension and vocabulary development through meta-cognitive strategies, Cubukcu (2008) examined how strategy instruction affects Turkish students' reading comprehension and vocabulary development in English. The experimental students were trained in 10 meta-cognitive strategies, i.e. (1) using strengths, (2) inferring meaning (through word analysis or other strategies), (3) using background information, (4) evaluating the text, (5) searching information according to a goal, (6) reading goals, (7) distinguishing, (8) deciding on the difficulty, (9) revising, and (10) guessing the later topics. Participants of the study were 130 students of the English language department in Dokuz Eylul University, who were randomly assigned to two groups (experimental and control).The experimental group received meta-cognitive instruction for five weeks, while the control group did not.

In a pretest-posttest design, Cubukcu (2008) used two instruments: a 20 item multiple-choice vocabulary test developed by the researcher with items from the text that were used as reading material, and a reading comprehension test developed by TOEFL (Test of English as a Foreign Language). The same tests were used in the pretest and posttest.

The important finding is that meta-cognitive strategies had a significant effect in increasing vocabulary knowledge and improving reading

comprehension skills. This finding provides further evidence that providing extra information about the meaning of certain words in the text or letting readers guess the meanings related to the context of a text are helpful strategies to comprehend the text better.

Just like Cubukcu (2008), the current study includes a vocabulary test consisting of 20 items that are found in the treatment texts. However, it does not explicitly discuss the meta-cognitive strategies, but models them in scaffolding questions.

Another study on the effect of strategies on reading comprehension was conducted by McKeown, Beck, and Blake (2009), who compared two types of reading comprehension instruction approaches: content-based and strategy-based.

To measure the effect of content-based and strategy-based instruction on reading comprehension, they compared mean scores of two experimental groups (content-based and strategy-based) and one control group (conventional instruction) using a one-way ANOVA. In the first experimental group (content-based approach), students were taught to read the text by focusing on the meaning through a reading activity guided by comprehension questions related to the text. In doing so, the teacher applied questions in a so-called question to author (Qta) approach (Beck & McKeown, 2006) to initiate a reading activity in a discussion based on open-ended questions related to the main or important ideas of passages of the text. The questions also give students additional information that can help them guess the meaning of unfamiliar words used in the text. In the second experimental group (strategy-based instruction), the teacher guided students in reading narrative texts. In this strategy, the teacher explained the strategies, induced discussion, and helped students implement the strategies. These strategies are: summarizing the text, predicting meaning, drawing inferences, generating questions, and monitoring comprehension. Not all of these strategies were implemented in all reading lessons, as they were left at the discretion of the teacher depending on the text and learning context.

In the control group, the teacher taught conventionally in a so-called basal reading classroom using lesson materials consisting of questions available in the teacher's script-book. The teacher asked questions around the text content during reading, hereby implementing guided comprehension in reading. For both of the experimental and the control groups, students received 45 to 75 minutes instruction for 5 days a week.

Their study was conducted in the real context of classroom reading instruction and lasted 2 years. Five narrative texts were selected for the first year, and the same texts were complemented with three expository texts that were used in a new cohort of students in the second year of the study. Participants of their study were fifth graders of 119 students, from six intact classrooms in a low-performing urban district, who took reading in their regular classrooms in context of English as L1.The three different treatments in this study were implemented in all six classes, with each treatment being implemented in two classes.

The study by McKeown, Beck, and Blake (2009) investigated the transfer effect of the three approaches on text comprehension. The result revealed that there was no significant difference in reading comprehension between content-based, strategy-based, and conventional instruction groups. This suggests that all of the instructional approaches give adequate transfer effects on reading comprehension performance.

Another study, by Yea-ru Tsai, Ernst, and Talley (2010), examined the relationship between the strategies used in L1 (Chinese) and L2 (English) in L2 reading comprehension context. They also investigated the difference between skilled and less skilled readers in L1 and L2 in the strategies usage in reading comprehension. 222 college students of EFL participated in this study. Over the course of 3 weeks, several tests were given to the students. In week 1, a test of L2 English proficiency (grammar and vocabulary test) was administered. In week 2, an English reading comprehension test was administered, followed by a questionnaire in L2 strategy. In the week 3, a L1 (Chinese mandarin) reading comprehension test was administered, followed by a questionnaire in L1strategy. Each of these tests took 2 hours to complete.

Yea-Ru Tsai et al. found that: (1) L2 reading comprehension has a significant relationship with L2 language proficiency and L1 reading comprehension; (2) there was no significant difference in L1 reading comprehension strategy between skilled and less skilled readers; (3) there was a significant difference in L2 reading comprehension between skilled and less skilled readers. That is, the skilled readers used more strategies in reading comprehension in the context of Chinese students of English as a foreign language.

Even though this study did examine the effect of strategy on reading comprehension gain, this study does provide a good model to examine

differential usage of strategies in relation to the high and the low ability of students. The current study employs a similar model to examine differential effects of scaffolding strategy on the lower and higher ability students, especially in reading comprehension and vocabulary gain.

2.1.5 Synopsis reading comprehension strategies

To summarize, strategy significantly affects reading comprehension skills and vocabulary knowledge in the EFL context. Knowing strategies in reading provides a significant transfer effect in improving reading comprehension skills and increasing vocabulary knowledge (Cubukcu, 2008). Related to the current study, this study has a similar context of EFL participants (sophomore students of English department) and the same vein in evaluating the effect of strategy in reading comprehension and vocabulary test. Some procedures are also applied in the current study

In the different context of a reading class of English as a L1 in primary school, McKeown, Beck, and Blake (2009) also found that a strategy-based approach provides significant effects in improving reading skills. However, the effect provided by strategy-based instruction was not statistically different from a content-based or conventional approach in reading comprehension skills. This suggests that strategy-based, content-based, and conventional instruction approaches provide similar transfer effects in improving reading comprehension skills. In the other words, these strategies are assumed to be more or less effective depending on the reader, the text, and the context. Background knowledge, motivation, reading skills, level of difficulty and genre of text, and the circumstances of the reading process are all factors that need to be considered when attempting to have a maximum impact on reading comprehension. Moreover, the linguistic skills of the L2 readers are important: in order to make sense of the text, the L2 readers need to understand the L2 words.

The previous studies on reading strategies have shown to be useful in improving reading comprehension. The teacher's role in providing guided comprehension was substantial in enhancing the effect of strategies in the reading classroom process and achievement. Providing scaffolding, such as giving extra information about the meaning of certain words in the text or letting readers guess meaning from the text, is a helpful strategy to comprehend the text better. Therefore, the current study will include four strategies--

monitoring, answering questions, generating questions, and summarizing-which are modelled on the worksheets to be used as scaffolding by the students when reading the text.

2.2 Reading and incidental vocabulary acquisition

In both the L1and L2 literature, it holds that on the one hand there is a strong interrelationship between reading comprehension and vocabulary, while on the other hand the relationship cannot be explained clearly because of the inconsistencies of the relationships between them. As proposed by Aarnoutse and Leeuwe (1998), Qian (2002), and Duffy (2009), in addition to the other important factors such as text difficulty and background knowledge, vocabulary knowledge is essential for reading comprehension. A better understanding of the vocabulary meaning will result in a better understanding of the whole meaning of the text. Conversely, lack of knowledge of vocabulary meaning will cause inadequate comprehension of the text. However, in an EFL context, knowing the meaning of all the words in a text does not guarantee that someone will be able to comprehend the whole text (Schmitt, Jiang, & Grabe 2011). All of the studies mentioned focused on examining the effect or contribution of vocabulary on reading comprehension. In contrast, the current study will focus on the effect of reading on vocabulary.

Many studies have been conducted to investigate the effect of reading in vocabulary acquisition and learning (e.g. Krashen, 1989; Horst, Cobb, Meara, 1998; Rott, 1999; Saragi, Nation, & Meister, 1978; Hulstijn, Hollander, & Greidanus, 1996; Pigada & Schmitt, 2006). As suggested by Krashen (1989), an essential part of the L2 lexicon is obtained via reading. This is because the input from reading permits learners to process words more intensively than when given oral input. Moreover, the context that reading provides is more effective for remembering words than when lists of words are memorized.

The relationship between reading comprehension and incidental vocabulary acquisition is clearly shown by Rott (1999). In her study, she concentrated on investigating reading as a means to supply input and measured vocabulary gain and development. Rott examined whether FL learners of German incidentally acquire vocabulary from reading and whether they retain unfamiliar vocabulary. In addition, she controlled for frequency of occurrence of unfamiliar words in the texts (2, 4, and 6 times). Through a quasi-

experimental design, the subjects were randomly assigned in 2 experimental groups with different sets of target words (set 1 and set 2). A preliminary vocabulary test ensured that the target words were unknown by the participants. Six reading passages were provided, containing 6 target words. The participants read the passages (two weeks for 2 exposures, and 4 weeks for 4 exposures, and 6 weeks for 6 exposures). There were 3 posttests: immediately after the treatment, a week later and a month later. The results suggested that the strong effect in incidental vocabulary acquisition was significant. Through the reading text, consisting of 12 unfamiliar words in the different texts for 2, 4, and 6 exposure times, the readers demonstrate significant improvement in word knowledge.

The effect of exposure was significant in improving word knowledge. Students who encountered unfamiliar words for 2, 4, and 6 times during reading showed more word knowledge than students who had not met unfamiliar words during reading. The results indicate that only two encounters with unfamiliar words provide a significant effect on vocabulary development. In addition, two or four encounters provide a fairly word knowledge gain, while six encounters with unfamiliar words provide a significant effect on vocabulary knowledge gain.

This study suggests that increases in reading comprehension are followed by increases in vocabulary gain. However, the study also reports mixed results for the gain of word knowledge retention as a result of reading. Almost all of learners retained a significant gain of receptive vocabulary knowledge during reading over 4 weeks. However, about half of them revealed a significant decrease in productive word knowledge over 4 weeks.

In the same line, Saragi, Nation, and Meister (1978) found that extensive reading contributes to vocabulary gain, even though their study did not focus explicitly on learning vocabulary. In their experiment, they examined the effectiveness of an indirect approach, especially extensive reading. They used the novel *A Clockwork Orange* (Anthony Burgess, 1972) and a sample of 241 target words of Russian slang (Nadsat) that were unknown to the English native speakers. The subjects of this study were 20 English native speakers who work in different educational projects in Indonesia. The book consists of 60.000 words and the frequency of occurrence of the slang words varied from 1 to 209 times, with an average of 15 times. 90 words (49 of which occurred 19 times and 41 with a low frequency of occurrence) were picked from the text and

provided in a multiple choice test. The important finding from this study is that there was a moderate ($r=.34$, $p<.005$) relationship between frequency of occurrence and vocabulary acquisition. As claimed also by Hulstijn et al. (1996: 332), "incidental vocabulary learning does indeed take place but only incrementally and in small quantities".

The effect of extensive reading on vocabulary acquisition was also investigated further by Pigada and Schmitt (2006), who explored whether an extensive program of reading can enhance lexical knowledge of a learner of French as a second language. The participant of this study was a 27 year old native speaker of Greek who was also fluent in English as a second language. The results showed that extensive reading contributed significantly on knowledge enhancement in spelling, meaning, and grammatical behavior of words in the text. The study also gives a new insight on the effect of reading on incidental vocabulary acquisition: extensive reading may have an effect on vocabulary learning, but the effect is inconsistent for some kind of words (Pigada & Schmitt, 2006). Some words with a higher frequency of occurrence were not always easier to comprehend. Since frequency of occurrence in the text is only one of the many factors that affects vocabulary acquisition, it is possible that some of the low frequency words are easier for readers, suggesting that vocabulary gain in this context was also affected by other factors, such as similarities of target words with the L1, individual strategies, attention, motivation, or context clues that enhance comprehension and acquisition of new words. However, from this study we may consider that extensive reading does have an effect on vocabulary learning.

However, an earlier study in this field conducted by Horst, Cobb, and Meara (1998) showed a relatively small effect of reading on vocabulary acquisition (only one word in twelve). Nevertheless, in most cases, as demonstrated by Wesche and Paribakht (2000), gains appear to be incremental and cumulative, with success in inferring word meanings and other lexical features also dependent on other factors such as clear textual cues to the meanings of unknown words, whether the readers' L2 proficiency is high enough to use the cues, and the formal similarity of the new words to known words in the L1 (Haynes, 1993). In addition, learning through incidental exposure is most effective when students know how to take advantage of it, for example, by being aware of word families and of productive affixes for

analyzing words into parts, by knowing when and how to use contextual cues, and by knowing how to use a dictionary effectively (Fraser, 1999).

Pulido (2004) further investigated the role of proficiency level in the L2 as well as topic familiarity. Subjects were 99 English native speakers and adult learners of Spanish as a second language. They were classified into three different proficiency levels: beginner, intermediate, and advanced. By using a repeated-measures design, the subjects were allocated into experimental reading conditions using similar familiarity passages. Therefore, there were 4 sessions in collecting data. In the first session, all of the subjects completed a questionnaire related to topic familiarity and were tested in reading proficiency. A week later, a second session was allocated for reading 4 stories, followed by a comprehension test. An intake (vocabulary gain) measurement was performed two days after the second session in the third session. The final session was performed to measure vocabulary retention by using the same instruments as those used in the third session. The study found a significant main effect of passage comprehension in vocabulary gain (intake). However, the effect of this variable also depended upon topic familiarity of the passages. These findings confirmed and expanded previous findings from Diakidoy (1998) in the L1 context and Jacobs et al. (1994) in the L2 context. This is also in agreement with Rott (1999), who found that increases in reading comprehension are followed by increases in vocabulary gain and retention. This suggests that readers with greater levels of comprehension will have greater possibilities to acquire greater vocabulary in reading.

Finally, Pulido (2004) suggested that there are several strategies the learners used that contributed to vocabulary gain: (a) noticing that certain words were unfamiliar and that there was a gap in existing knowledge; (b) inferring meaning from context using linguistic and extra linguistic, or background knowledge; and (c) elaborative rehearsal, or attending to the connections between the new lexical forms and their meanings and associating the new words with previous knowledge. To the extent that lexical gains varied, it is fair to assume that there were variations in the degree to which learners may have allocated attention to the unfamiliar words during the above processes.

In the studies in this dissertation, vocabulary gain is also measured with the expectation that greater comprehension or more explicit attention leads to more vocabulary gain.

2.2.1 Synopsis reading comprehension and vocabulary

To summarize, the previous findings suggest that reading supplies a substantial effect on incidental vocabulary acquisition. Through a repeated measures analysis, Rott (1999) found that frequency of exposure of difficult words in a text has an immediate effect on the extent of vocabulary knowledge gain. This suggests that increases in reading comprehension are followed by increases in vocabulary gain. However, the study also reports mixed results for the gain of word knowledge retention as a result of reading. Almost all of learners retained a significant gain of receptive vocabulary knowledge during reading over 4 weeks. Still, about half of them revealed a significant decrease in productive word knowledge over 4 weeks.

Similarly, Saragi, Nation, and Meister (1978) reported that extensive reading contributes to incidental vocabulary learning. This study also found that frequency occurrence of words in text has moderate correlation with vocabulary acquisition.

A different result was reported by Pigada and Schmitt (2006), who found that extensive reading only gave an inconsistent effect on vocabulary learning. Some words with a higher frequency of occurrence were not always easier to comprehend. Pulido (2004) also found a significant main transfer effect of reading comprehension in a vocabulary knowledge gain (intake). However, the transfer effect of reading on intake also depended upon topic familiarity of the passages.

These findings suggest that reading may provide immediate and transfer effects on the increasing vocabulary knowledge gain (intake). Therefore, the current study also measures vocabulary gain in the reading comprehension classroom by assuming there is a relationship between them. The improvement in reading comprehension gain will be followed by an increase in vocabulary knowledge.

2.3 Scaffolding

This section will present a review of the literature on scaffolding as related to the current study. First, the conceptual basis of scaffolding is discussed in a general context of education and then within the specific context of reading comprehension. Then, I will review some previous studies on the effect of scaffolding in the context of reading comprehension. After that the same is done for cooperative learning in the next section. The final summary will motivate the choices that have been made in the current study.

2.3.1 Scaffolding in education and reading comprehension

The term "scaffolding" is derived from construction terms in which a scaffold is a supporting framework or temporary platform to stand or sit on when working at a height above the floor or ground (Meriam Webster Dict., 2014). In an educational context, the concept of scaffolding is related to the literal sense. Wood, Bruner, and Ross (1976) may have been the first to introduce this concept in terms of a process that allows a child or novice to resolve a predicament, such as doing a certain task, or obtaining an objective wherein they cannot do without assistance. In an educational context, scaffolding means "support given by a teacher to a student when performing a task that the student might otherwise not be able to accomplish" (van de Pol, Volman & Beishuizen, 2010: 274). This support can be in posing questions, and giving feedback, examples, or explanations.

The essence of scaffolding is the temporary support a teacher gives to help students individually or collectively to complete a task that they might not be able to do without help (Graves, Watts, & Graves, 1994). The support is intended to facilitate children to improve their abilities, skills, and knowledge (Rogoff, 1990). Poorahmadi (2009) describes the concept as providing support to facilitate students in attaining a skill or mastering a concept, and then little by little shifting responsibility to the students.

To summarize, there are three essential aspects underpinning the meaning of scaffolding in an educational setting: temporary assistance/help/support, improving skill and knowledge, and change responsibility to the child, the novice, or the learners. Based on the above, I will define scaffolding as a process or activity in which a teacher (or other expert) helps students by supporting their learning temporarily. The teacher provides scaffolded

assistance when students need it and then gradually reduces and removes it as they learn and develop their knowledge and skills.

In the context of reading comprehension, Clark and Graves (2005: 572) classified three types of scaffolding, i.e. (1) "moment-to-moment verbal scaffolding", (2) "instructional frameworks that foster content learning", and (3) "instructional procedures for teaching reading comprehension strategies". Moment-to-moment verbal scaffolding requires the teacher to provide appropriate support for each student, for example by asking questions and elaborating on the student responses in the reading process. In doing so, the teacher may transfer knowledge and experience to support the learning process in the classroom. The second type of scaffolding emphasizes instructional frameworks that foster content learning. This type of scaffolding is meant to guide and improve students' comprehension and learning. If possible, moment-to-moment verbal scaffolding can be implemented in this framework. In doing so, a teacher may design her/his lesson to optimally support the reading experience for students. There are two frameworks for this type: (1) Questioning the Author (QtA) (Beck, McKeown, Sandora, Kucan, & Worthy, 1996) and (2) the Scaffold Reading Experience (SRE) (Graves & Graves, 2003). The first framework focuses on verbal scaffolding and the second consists of a variety of types of scaffolding.

QtA supports students in interpreting, comprehending, and elaborating on the meaning of the text by asking questions about the author's intentions. In doing so, teachers may generate open-ended questions as queries, such as: what does the author means in this text? Does she/he explicitly explain that in the text? Why does the author agree or disagree with something? Essentially, these kinds of queries are intended to involve students in exploring the meaning of the text gradually to reach full comprehension at the final stage of reading process.

SRE is a more flexible framework in assisting students to comprehend the text, learn from it, and enjoy both narrative and expository texts (Graves & Graves, 2003). Just like in the QtA framework, the teacher's role is to design and implement her/his lesson to optimally support the learning experience. In doing so, the teacher may consider what the students will do in reading, what kind of text is appropriate for the students, and what aspects need to be stressed in the reading activity. Particularly in this phase, the teacher may design pre-, whilst, and post-reading activities for the students.

The third type of scaffolding emphasizes instructional procedures for teaching reading comprehension strategies. The main goal is to help students become independent readers through strategies (Clark & Graves, 2005). In doing so, the teacher explicitly teaches strategies that promote reading independence, continually engages students in practice supported with multiple texts, and gradually transfers responsibility to students, as they become independent readers. This type of scaffolding includes direct explanations of comprehension strategies (DECS) and reciprocal teaching (RT) (Clark & Graves, 2005; Duffy, 2002).

The DECS teaches individual comprehension strategies in an explicit and very straightforward way (Duffy, 2002; Duffy, Roehler, Sivan, Rackcliffe, Book, & Meloth, 1987). Duke and Pearson (2002) propose five procedures that teachers should follow in implementing the strategies, which are describing the strategy, modeling, using a strategy collaboratively, providing guided practice, and using the strategy independently. Unlike DECS, the RT teaches four strategies in a process that includes a relatively short period of instruction on these strategies followed by many small-group dialogues in which the teacher guides students in their use as they collaboratively read segments of a text. According to Palincsar and Brown (1984), the four strategies emphasize the teacher's role in posing questions, guiding students to summarize the important ideas of the text, clarify meaning, and guess meaning from the context. Essentially, the core of the RT is to set up the learning process in a series of dialogues wherein the teacher and students are involved in the reading process and discus a text in small groups. Before discussion, the teacher may explain in detail the strategies and do a preliminary assessment to measure the students' ability so that she or he knows how to support the students individually in the learning process. Furthermore, as the group progresses through the passages of text segment by segment, the teacher implements the four strategies in practice. These strategies help students to understand the purpose of reading, activate their prior knowledge, focus their attention on important content, critically evaluate the text, monitor comprehension, and draw and test the inferences they make. The teacher's role in the discussion is to facilitate and help students when needed in each group, and monitoring the discussion to ensure the discussion will not go on the wrong direction.

To summarize, from the various types of scaffolding that are commonly used in a reading comprehension context, we may conclude that different types

of scaffolding are applicable as strategies to help students to gain comprehension of the text. What is most important is that scaffolding is attuned to the needs of the students in reading a particular text, and assistance should be gradually reduced. Therefore, the current study takes the proficiency level and assumed background knowledge in account while developing scaffolding for a particular text.

2.3.2 Empirical studies in scaffolding

In the specific context of reading comprehension, most studies on scaffolding were influenced by a cognitive psychological or social constructivist approach. From a constructivist view, Attarzadeh (2011) investigates the effect of scaffolding on reading comprehension of diverse text types. Participants of this experimental study were 180 EFL Iranian learners with different levels of proficiency. The participants were selected randomly and divided into three homogeneous classes consisting of 30 students in each group: three scaffolding groups as experimental groups, and three other non-scaffolded groups as control groups. In the experimental groups, students were exposed to constructivist-interactive models of learning. Students worked with texts individually in the whole classes and then discussed the meaning of the texts in a small group discussion. In the control group (non-scaffolded), students were taught in a traditional individual learning way. All groups were taught 20 units on selected different text types for each level. The texts were authentic and on general topics in different genres: narrative, argumentative, descriptive, and explanative texts. The texts were selected from English books with three different levels for elementary, intermediate, and advanced readers. The total time of forty minutes was divided into two time spans, fifteen minutes and thirty minutes for both scaffolded and non-scaffolded groups. The first fifteen minutes were assigned to identify teaching conditions for both groups including pre-reading and while-reading activities. The scaffolded group was exposed to a constructivist interactive mode and collaborative learning mode while the non-scaffolded group was taught using traditional individual reading.

The result revealed that effect of intervention was robust for reading comprehension. By considering the various types of text, the narrative genre especially was found to be appropriate to scaffold students in reading comprehension. The study also found support for the important role of overall language proficiency in processing reading comprehension. The interactions

between various text types and different proficiency levels showed the superiority of scaffolding in narrative text for the mid level of learners.

Pishghadam and Ghadiri (2011) examined the effect of two types of scaffolding on reading comprehension within groups that worked cooperatively in symmetrical and asymmetrical conditions. The subjects of this study were 52 participants assigned in 2 groups based on their pretest scores. Group 1 (symmetrical) consisted of 24 participants, and group 2 (asymmetrical) consisted of 28 participants. The symmetrical group consisted of pairs of students with the same level (score difference is less than one SD), whereas in the asymmetrical group pairs consisted of students with different levels (difference of more than one SD). To operationalize scaffolding, the researchers used the same reading tasks in both groups, consisting of 8 short passages. The students completed the tasks cooperatively in all of the groups, guided by the same teacher. Basically, students' activities in this experiment were discussing and helping each other to comprehend the text better. The study found that asymmetrical scaffolding is more effective than symmetrical scaffolding. However, both of them were effective in improving students' achievement in reading comprehension.

Safadi and Rababah (2012), who used a quasi-experimental design, found that scaffolding was effective in assisting students in increasing reading comprehension achievement in the EFL classroom context. They compared two scaffolding groups as experimental groups and two traditional groups, taught by a conventional method, as control groups. They found that scaffolding instruction improves reading comprehension achievement and skills related to finding main ideas, drawing inferences, critical thinking, and vocabulary.

Furthermore, Poorahmadi (2009) conducted an experimental study to measure the effect of scaffolding strategies and classroom tasks on reading comprehension in 130 Iranian EFL female freshmen learners. The study found that scaffolding has a strong effect on the students' achievement in reading comprehension. Participants of her study were selected from the population of English major students who had passed a placement test (i.e., a Cambridge Key English Test) at a private university in Tehran in the academic year of 2005-2006. The participants were randomly assigned and divided into experimental and control groups with 65 students in each group. The study was guided by the assumption that EFL students with adequate assistance in reading

comprehension could improve their ability and could speed up their comprehension.

For the instrument, the researcher adopted the Cambridge Key English Test and complemented it with four task-based examinations. The items of the test were selected and modified from the various textbooks for elementary and intermediate level. Then, reading comprehension tasks for upper elementary and upper intermediate levels were provided in the preliminary phase of this study.

Scaffolding procedures included an emphasis on task-based instruction, with skimming and scanning the text, preliminary activities as a warm up to activate background knowledge, instruction in the students' mother tongue, supporting translation, verbal scaffolding, and using dictionaries when needed. Then, the data were collected based on the pretest, 4 internal tests, and the posttest. Data analysis was performed by a repeated measure analysis of variance (ANOVA).

The results reveal that the experimental group outperformed the control group. There is a significant difference among the four mean scores of the experimental group, which indicates an improvement throughout the treatments. There is no significant difference in the control participants' performances on the tests. This suggests that the experimental group participants' ability in reading comprehension is considerably improved throughout the experiment, because of the scaffolding strategy in the study.

To sum up, scaffolding can improve the reading ability and general proficiency of EFL language learners. The results provide enough support in considering scaffolding as an effective aid to improve reading comprehension and vocabulary, either in cooperative or individual learning. The current study uses a somewhat different condition. The two scaffold groups are taught in a cooperative and individual learning condition, while the non-scaffold group is exposed to the traditional individual learning condition.

2.3.3 Synopsis scaffolding

Previous studies report the effectiveness and positive effect of scaffolding in improving reading comprehension achievement in the EFL context. Attarzadeh (2001) found that scaffolding, level of proficiency, and text types provide significant transfer effect on the improvement of reading comprehension.

Similarly, Safadi and Rababah (2012) found that scaffolding was effective in increasing reading comprehension achievement and improving skills related to finding main ideas, inferencing, critical thinking, and vocabulary. Specifically, Poorahmadi (2009) found that scaffolding provides a significant immediate and transfer effect on the student's achievement in reading comprehension achievement as indicated from the improvement scores over the time.

As far as levels of proficiency are concerned, Pishgadam and Ghadiri (2011) found that the higher level groups (level of proficiency 1 above SD score in asymmetric group) perform better than the lower level groups (level of proficiency 1 below SD in asymmetric group). The higher and the lower groups were taught in a separate group. However, both of them showed significant improvement in reading comprehension achievement.

Of the 4 studies above, three of them only measured transfer effect of scaffolding treatment through pretest-posttest design for a one-way ANOVA. One of them, Poorahmadi (2009) employs a repeated-measure and one-way ANOVA design to measure immediate and transfer effect using 4 internal test scores collected in the end of each intervention times and pretest-posttest scores. Just like Poorahmadi (2009), the current study emphasizes the analysis on immediate and transfer effect on three different conditions. In addition, differential effects of scaffolding on two different level of ability (higher and lower) in reading comprehension will also be examined. Unlike Pishgadam and Ghadiri (2011) did, scaffolding treatment for the higher and the lower group in the current study was conducted in the same groups. Therefore, which group obtains more benefit from scaffolding can be measured by comparing mean scores between groups.

In considering the fact that scaffolding can be provided to individuals or cooperative groups of students (Graves, Watts, & Graves, 1994), and learning occurs at a social level before it happens at an individual level (Van de Pol, Volman & Beishuizen, 2010), the current study will employ two conditions of scaffolding, i.e. scaffolding in individual learning (SIL) and scaffolding in cooperative learning (SCL). Scaffolding is defined as temporary support given by the teacher to assist students to understand a text through comprehension questions. The comprehension questions consist of questions related to the text as a whole and per passage, and what students can infer or summarize from the text explicitly and implicitly. To keep the treatment as similar as possible, the scaffolding questions are provided on worksheets. In the SIL condition, learners

work on their own, whereas learners in the SCL condition work in groups to answer the scaffolding questions. One important difference between the current study and the ones reported on is the concept of transfer. The question is whether students have actually learned to apply scaffolding strategies to reading a new text. In the current study the text is first read with the help of scaffolding questions, the answers of which are checked by students themselves using key answer from the teacher. After that there is a reading comprehension multiple choice tests on each treatment. However, the pretest and posttests (texts and multiple choice questions) have not been scaffolded.

As mentioned previously in 2.2.2, most of the studies in scaffolding measure transfer effect only. However, the present study focuses not only on the transfer effect, but also on the immediate effect of the scaffolding. In addition, the differential effect of scaffolding on the lower and the higher ability students and the effect on gain in a specific condition of cooperative learning were also addressed. The assumption is that since reading and cooperative or individual learning are interactive processes in dynamic conditions, the effect of scaffolding will be influenced by the intensity of group work and individual effort in such conditions. For this reason, together with students' ability in reading comprehension, the link between attitude towards group work, individuals' contribution to the group, and group processing will be addressed in the present study. Based on the results of previous studies (discussed in the next paragraph), it is expected that these factors may affect students' gain.

2.4 Cooperative learning

Previous studies have looked at scaffolding in individuals and groups. In this section I will examine the ideas behind cooperative learning and empirical evidence for it in reading comprehension tasks. The theoretical bases of cooperative learning can be related to behaviorist theory, cognitive-developmentalist theory, and social-interdependence theories (Johnson & Johnson, & Smith, 1998). From a behavioral view, it is assumed that individuals are more productive when they work in groups rather than alone (Gillies & Ashman, 2003). Human behavior is determined by the environment, either through social (group) interaction or reinforcement. Rewards are important factors in social interaction. Manifestation of rewards may be in the form of acceptance in groups, support, cooperation, assistances, companionships, or

mutual aids. Therefore, cooperative learning is a learning style that is in line with behaviorist principles in that it provides reward and reinforcement.

From a cognitive-developmental view, cooperative learning is assumed to be an important factor in cognitive growth and development. Cooperative learning involves modeling, coaching, and scaffolding and is related to a conceptual framework that provides for understanding what is being learned (Johnson & Johnson, & Smith, 1998). Co-operation through social interaction in the environment (physical and social) is also believed to be an essential factor in intellectual growth and cognitive development (Vygotsky, 1978).

The social interdependence view holds that cooperation is the essence of interdependence among members of a group. In fact, interdependence can be positive (cooperation), negative (competition), or nonexistent (individualistic efforts) (Johnson & Johnson, 2008). Therefore, positive interdependence is an important factor in cooperative learning.

According to Johnson, Johnson, and Holubec (1998), the essence of cooperation is working together to accomplish collective goals. In particular, cooperative learning in a small groups is learning wherein all of the students work together to optimize their capabilities (Johnson & Johnson, 2008). In a similar vein, Slavin (1982) stresses that students with mixed abilities should work in small groups together to achieve shared goals. The idea is that in a cooperative learning class, students are involved in close interaction in a learning activity characterized by the interdependence of all members of the group, who each have an individual accountability to achieve the shared goal.

In a cooperative learning situation, learners have to be responsible for mastering the learning material and making sure that the other group members are able to master the task as well. There are five basic elements of cooperative learning that are assumed to make cooperative activities more productive than competitive and individual learning: positive interdependency, face to face promotive interaction, individual accountability, interpersonal and small group skills, and group processing (Johnson & Johnson, & Holubec, 2004). Positive interdependency is comprised of interdependency of objectives, rewards, resources, and roles. As far as objectives are concerned, students have the same view that they are able to attain their goal if all group members are able to reach it. The principle of interdependency is that each group member will accept the same reward if the group is able to achieve the group's goals. The interdependency of resources means that each group member has to share

information, knowledge, and relevant resources that are useful in completing group work.

Interdependency of roles means that each group member is given complementary roles and interrelation in responsibilities so they can complete their group work (Johnson, Johnson, & Holubec, 2004). Therefore, a teacher has the responsibility to build interdependency roles among students by giving them complementary roles such as reader, writer, checker, speaker, leader, developer, etc. These roles are important in achieving a high quality of learning by applying a cooperative learning strategy. The positive interdependency results in promotive interaction as individuals encourage and facilitate each other's efforts to learn (Johnson & Johnson, & Smith, 1998). It means that the success of the group in the learning activity is determined by the individual efforts of each member of the group and each individual in the group has a specific contribution to make according to ability, role, and accountability.

Promotive interaction refers to a situation in which students have interdependency in facilitating each other in a mutual effort to reach successfulness in the group (Gillies, 2007). For instance, the students help each other by sharing information and exchanging material, processing information efficiently and effectively, giving feedback to improve their performance, giving support and making an effort to attain their shared goals, completing their tasks, and working together.

Individual accountability can be given by the teacher to each of the students according to their roles in the group (Johnson, Johnson, & Holubec, 2004). Additionally, to make individuals responsible for their roles, teachers need to: (1) compose small cooperative groups with a maximum of 5 members; (2) do individual testing of each of students, (3) observe and make a note of each contribution of the members of the groups, and (4) ask students to share what they know (information) to other students. As far as individual accountability is concerned, the basic principle is as follows: students learn and work together, and at the end they do the task individually. They learn the knowledge, skills, strategies, and procedures in the group, which in the end they have to apply individually to show their personal/individual mastery.

Small group and interpersonal skills are the fourth basic element of cooperative learning. In the cooperative learning group, students are required not only to master their learning material related to academic skills, but also to master small group and interpersonal skills. Group processing is the fifth

element of cooperative learning. Group processing can be defined as a reflection of the group's performance to evaluate successes and failures of the group and a contribution of each group member to make decisions about which performance needs to be followed up. In this context, there are two levels of group processing, i.e. in small groups and in the whole class as a group. The main objective of group processing is to clarify and to increase the effectiveness of group members in the light of their contribution to the group work to achieve the group's goals.

Specifically, Slavin (1991) argues that cooperative learning has positive effects on students' achievements if the groups have at least two important features: group goals and individual accountability. These two characteristics are the most important elements underpinning the cooperative learning concept. Interdependence among students involved in groups makes them responsible in their roles and individual accountability. In addition, Shaaban (2006) points out that the effectiveness of cooperative learning is much dependent on other contextual variables. In this sense, variables of time (how long the researcher does the treatment), levels of ability, motivation, attitude, gender, and complexity of interaction among students must be taken into consideration.

2.4.1 Empirical studies in cooperative learning

Many studies have been conducted to examine the effectiveness of cooperative learning in the context of teaching English as a foreign language. Widaman and Kagan (1987) focused their study on examining the different impact of diverse cooperative learning methods, and the interaction of student characteristics with these learning methods. First of all, they found significant differences in the impact of various cooperative learning techniques such as Students Teams-Achievement Divisions (STAD) and Teams-Games Tournaments (TGT). Second, there was a close interaction between ethnic status and cooperative-competitive social orientations within the classroom structure according to the students' achievements. Johnson and Johnson (2004) reported that students in the cooperative learning situation were involved more effectively in group work, more intensively in learning, and were more responsible in managing their role in groups individually. In addition, they were more sensitive to what other students needed, practiced their communication skills more frequently,

were more motivated to attain group goals, and were more productive in their achievements than their peers in individual groups.

In a cooperative learning condition, many positive effects can be found such as a high level of interaction among students, mutual liking, effective communication, a high level of acceptance and support, a high level of sharing and helping, a high level of emotional involvement, and no comparison between self and others. In line with these findings, Sharan (1980) and Slavin (1989) noted that cooperative learning can be applied in improving students' achievement and social skills and enhancing their attitudes towards learning and working cooperatively.

In a study on EFL in a heterogeneous Israeli classroom, Shachar and Sharan (1995) found that cooperative learning methods applied by teachers have a positive effect on improving peer interaction in small groups, increasing students' motivation to learn, and showing more flexibility and multiplicity in the subject matter. Moreover, the speed of learning and teaching increased. These findings are in accordance with positive effects shown by Veenman et al. (2002); Johnson and Johnson (1989); and Johnson, Johnson, and Holubec (2004), who have demonstrated that cooperative learning contributes to higher achievement in academic, cognitive, affective, and social skills.

Veenman et al. (2002) studied the implementation effects of a course on cooperative learning on teacher education colleges in the Netherlands. They conducted their experiment on two different teacher education colleges and found that there are significant positive effects on four of the five basic elements of cooperative learning: positive interdependence, face-to-face interaction, social skills and group processing. Furthermore, the study found a positive effect on the engagement rates of the students of school teachers in the treatment group. The experimental group improved in their achievements in both academic and social skills, as well as eagerness to use cooperative learning methods in their future lessons. The students taught by the cooperative method also indicated positive attitudes towards learning in groups and they preferred learning in groups to learning individually.

In addition, Veenman, Denessen, Van den Akker, and Van der Rijt (2005) investigated the effects of a teacher-training program on elaborations and affective-motivational resources (i.e., intentions and attitudes toward help seeking, help giving, and goal achieving) of students working on a cooperative task. The findings indicate that the program gives moderately positive effects on

elaborations surrounded by the treatment dyads. In addition, high-level elaborations in cooperative learning are positively associated with student achievement. The findings also indicate that supplementary teacher-training programs intended to increase students' achievements by means of elaboration have a positive effect on students' help-seeking and help-giving behaviors. In short, research findings on teacher's college related to cooperative learning demonstrates the effectiveness of cooperative learning in promoting higher levels of students' achievements.

Cheng and Warren (2000) demonstrate that learning in a group increases communication and social skills such as presentation, leadership, organization and problem solving. This is because cooperative learning gives more opportunities to the students to get involved in a meaningful interaction in an active-learning context and promotes a higher achievement for students, enhances motivation, and in general improves social and psychological skills. Another study conducted by Meng (2010), comparing cooperative learning and a traditional approach, also confirmed that cooperative learning is more effective than traditional approaches. In a similar vein, Zhang (2010) confirms that when compared to traditional teaching, cooperative learning tends to increase students' activity and productivity, gives more opportunities and time to use language in practice communication, and promotes higher achievement.

A study conducted by Law (2010) emphasizes the effect of cooperative learning activities in Chinese instructional practices on students' motivation and reading proficiency. The study measured the effectiveness of two types of cooperative learning activities; the jigsaw and drama approach, and compared them to a traditional teacher-led approach in Grade 5 reading classrooms. The two experimental conditions emphasized the teachers' use of various motivational instruction practices to teach students to understand the story and guide students in a reading activity. The design of this study was based on the five contextual features of Concept-Oriented Reading Instruction (CORI) (Guthrie & Ozgungor, 2002), which include (1) knowledge goals, (2) real-world interaction, (3) autonomy support, (4) collaboration support, and (5) interesting texts. Interactions took place between teachers and students in condition 1 and condition 2, but not in the control group.

The subjects of this study were 279 students assigned to 3 groups. The study applied a quasi-experimental design with two treatment conditions (the jigsaw approach and the drama approach) and one control group (a traditional

teacher-led whole-class approach). The first condition intervenes with direct instruction integrated with the jigsaw approach. In lessons 1 and 2, the teacher taught the text following a whole-class approach. In lessons 3–5, students were assigned to six home groups comprising students with different abilities, with five to six students in each group. Members from each home group form six expert groups and each group was given one particular topic related to the text they had learned in the first and second lessons.

During group discussions, the teacher monitors whether the six groups have understood and discussed the topic in depth. The teacher also offers suggestions when needed. After sharing their understanding in the home groups, students return to the expert group and share the comments and suggestions from their home groups. Then, each expert group asks one member to present their ideas to the whole class. During their presentations, the teacher raises questions and makes comments based on the students' presentations. Students are also encouraged to give responses to their classmates in front of the whole class. The object of asking a student from an expert group to present to the whole class is to provide opportunities for teachers to give feedback about what students have learnt from the group discussions. The teacher also invites students to make comments on the topics discussed. The whole class interaction provides the students with an opportunity to learn from the teacher's feedback and to show that they understand the topics deeply.

The second condition is direct instruction integrated with a drama approach. Similar to the first condition, in lessons 1 and 2 the teacher teaches the students to comprehend the text following a whole-class approach. In lessons 3–5, students are assigned to six heterogeneous groups with five to six students in each group. At the beginning of the third lesson, students are asked to play the roles of the main characters of the story. Each group tells the story from the perspective of the role they were acting out in front of the whole class. The teacher asks questions to each group to help students understand the personal characteristics of the characters. Then, the teacher teaches students how to perform a drama technique known as still-images. Each group is asked to discuss the main scene of the story, design a still-image to represent the key scene, and present their still-image to the whole class. Furthermore, the teacher asks about the inner thoughts of the characters they have acted out. At the end of the activity, the teacher led the whole class to understand the story through challenging the characters' thoughts.

The control group is taught to understand the text following a whole-class approach. The teacher teaches the text directly and most of the time, the students work individually.

The important finding from the study is that the cooperative learning group guided by a teacher is more effective than the cooperative group with minimal support. This suggests that well-planned teacher's guidance and scaffolding are needed to conduct successful cooperative learning activities. Still, the findings indicate that students' higher-order reading performance can be enhanced through engaging in cooperative learning activities with well-planned scaffolding by their teacher.

Yager, Johnson, Johnson, and Snider (2001) studied the effect of group processing in cooperative group learning on third-grade students' achievement. Subjects of this study were 84 third-grade students of one school district in America. The subjects were randomly assigned by gender and levels of ability. In the cooperative learning groups, each of the groups consisted of 4 heterogeneous members including female and male students with different ability levels: one high ability, one medium, and one low ability student. In this experiment, there were two independent variables. The first variable is CL group with group processing, CL group with no processing, and individual learning (IL) group. The second variable is ability with three levels: high, medium, and low ability. In the first experimental group (CL with group processing), students were taught cooperatively, working together in small groups to complete a set of papers for 30 minutes. Then, there were 5 minutes at the end for group processing, in which students discussed how well they behaved as members of group, analyzed the difficulties that arose in the group work, and reflected on the improvement for the effectiveness of the further cooperative work. In the second experimental group, CL with no group processing, the five minutes at the end were spent on collecting and administering the assignments. In the IL group, students worked on their own, at their own pace and style, and completed the tasks as much as possible in the same amount of study time as the CL groups. At the end of the session individual tests were administered to measure their achievement.

The important finding from this study is that group processing, in which each of the members of the group contributes effectively and knows exactly what to do and how to function effectively in a group, has a positive effect on student achievement. The results revealed that the high, medium, and low

students of the CL group with group processing obtained higher achievements than the CL group without group processing and the IL group. In addition, the high, medium, and low students of the CL group without group processing attained better achievement than the IL group did.

In college EFL students, Jalilifar (2010) investigated the effect of cooperative learning on students' achievement in reading comprehension. The research instrument was adapted from the English Language Proficiency test (Fowler & Coe, 1976). Participants were randomly selected from 90 homogeneous pre-intermediate female college students and were assigned to three groups. Two experimental groups were taught using Student Team Achievement Divisions (STAD) and Group Investigation (GI), and the control group was taught traditionally using a textbook commonly used in individual teaching.

By focusing on the effectiveness of cooperative learning techniques related to EFL reading comprehension achievements, the study found that STAD has a significant effect on the achievements in reading comprehension skills. On the other hand, GI does not enhance reading comprehension significantly. Then, in increasing reading comprehension scores STAD has been found to be more effective than GI, CL, and the traditional class taught by means of classical method. In addition, team rewards provide a significant positive effect on reading comprehension performance.

Even though many positive effects of cooperative learning in general have been found, there are also studies that did not find such results for reading comprehension. For example, both Bejarano (1987) and Shaaban (2006) provide negative findings about the effectiveness of cooperative learning techniques related to EFL reading comprehension achievements. Bejarano (1987) found non-significant differences between the small-group and whole-class scores in reading comprehension. This study emphasizes investigating the effect of two CL groups, discussion group (DG) and students teams and achievement division (STAD), and the traditional whole-class method on the general achievement, listening comprehension, and reading comprehension of junior high school students who study English in the EFL context in Israeli schools. In addition, differential effects of small-group methods on the acquisition of students with different language skills were examined in this study. Participants of this study were 665 students in 33 seventh grade classes who studied English at 3 junior high schools. 18 teachers who participated in

this experiment were assigned at random to teach one of the three methods. Of the three schools, 11 classes were assigned as the DG group, 10 classes as the STAD group, and 12 classes as the whole-class group. The experiment was carried out during 5 school periods a week for 4.5 months. Measurement was conducted to assess student achievement through listening, reading, and a discrete test for grammar and vocabulary. The reading comprehension test measured students' ability to read sentences and match them with a given pictures, and to understand informative and narrative text. The test was given as pretest and posttest.

In the first experimental group (STAD), the students were assigned in small-groups of four consisting of students with heterogeneous ability levels. Then, the students - working in groups using worksheets - completed an individual quiz. Furthermore, the teacher calculated students' achievement scores and announced and rewarded the best group at the end of class. In the second, DG group, students worked in a group of four. The teacher set up reading tasks to comprehend informative and narrative texts, which can be used as topics of discussion. Each student in a group holds different pieces of information that need to be shared with all members of group. The discussion may include problem solving, role playing, or games related to topics of the text. Then, in the control group, students were taught in a whole-class traditional method situation.

The result of an analysis of variance (ANOVA) revealed there was no significant difference between the two CL groups (STAD and DG) and the whole-class method in reading comprehension, grammar, or vocabulary achievement. This suggests that the small-group teaching methods employed in this study did not promote better/higher achievement than the traditional whole-class method.

Similarly, Shaaban (2006) does not find cooperative learning to be more effective in increasing vocabulary acquisition or reading comprehension than whole class instruction with a conventional method. His study concentrated on examining the effects of cooperative learning on reading comprehension, vocabulary acquisition, and motivation to read among grade five learners of EFL. A total of 44 grade five EFL learners were randomly assigned to experimental and control group conditions. The study employed a posttest-only control group experimental design. Shaaban demonstrated that the cooperative

learning methods had no significant or positive effect on the achievements in reading comprehension skills.

Stockdale and Williams (2004) did find a positive effect for cooperative learning, but only for the low and the average students, not for the high ability students. This particular study examined college students of an introductory educational psychology course. The possible reason is that in the CL groups with heterogeneous abilities, the high ability students spent most of their time in re-explaining concepts that they had previously mastered to the average and the low ability students. As a result, they have had less time to master additional concepts individually. This finding did not confirm most of previous studies which found equal effects of cooperative learning for high, average, and low achievers.

There are some possible factors that prevent cooperative learning from having a significant impact on students' reading comprehension. The main factors may be related to a lack of knowledge of cooperative procedures, low levels of students' motivation, learning materials, background knowledge, learning strategy and/or meta-cognition strategy. Related to cooperative reading comprehension, the teacher also needs to give students explicit explanations about text comprehension strategies before they can carry out a cooperative reading activity meaningfully. The strategies of identifying main ideas, summarizing, guessing meaning, and making inferences have been found to be helpful in enhancing students' reading skills.

Due to the mixed findings in relation to cooperative learning and reading comprehension achievement, the current study will examine further whether the cooperative learning condition supported by scaffolding has an effect on reading comprehension and vocabulary gain. In other words, the study will include scaffolding in both conditions, in cooperative learning and in individual learning.

2.4.2 Synopsis cooperative learning

The previous studies in cooperative learning have shown that there are some mixed results. Law (2010), Jalilifar (2010), and Yager et al. (2001) found that cooperative learning provides a positive effect on students' achievement in specific context. Law's (2010) study showed that the cooperative learning group guided by a teacher is more effective than the cooperative group with

minimal support. This suggests that well-planned teacher's guidance and scaffolding are needed to conduct successful cooperative learning activities. Jalilifar (2010) found that in increasing reading comprehension scores, cooperative learning instruction is more effective than classical method. Therefore, in the current study scaffolding worksheets for students are well-prepared to support students' activity in elaborating the process of text comprehension through guidance questions. In addition, training in scaffolding in cooperative condition was also conducted to ensure the effectiveness of this strategy in improving reading comprehension skills.

Yager et al. (2001) found that group processing, in which each of the members of the group contributes effectively in a group, provides a positive effect in student achievement for all of the students' ability levels (high, medium, low). This finding is a slightly different from Stockdale and Williams (2004) who also found a positive effect for cooperative learning, but only for the low and the average students and not for the high ability students.

Moreover, Bejarano (1987) found no significant differences between the small-group and the whole-class scores in reading comprehension. This study reported no significant difference between the two CL groups (STAD and DG) and the whole-class method in reading comprehension, grammar, or vocabulary achievement. This suggests that the small-group teaching methods did not promote better achievement than the traditional whole-class method. A similar result is reported by Shaaban (2006). His study does not find cooperative learning to be more effective in increasing vocabulary acquisition nor reading comprehension in small-groups as compared to whole class instruction with a conventional method. In other words, the cooperative learning methods had no significant or positive effect on the achievements in vocabulary knowledge and reading comprehension skills.

These previous studies suggest that the mixed findings on cooperative learning condition need to be verified further. For this reason, I examine in more detail the effect of cooperative learning conditions on different level abilities as suggested from Stockdale and Williams's (2004) study. Also, group processing, in which each individual contribution to the group was studied (Yager et al., 2001), was considered as an important variable in the current study.

In the case of why CL gives no impact, some possible reasons should be considered. From a cognitive view, the main reason may be related to a lack of

background knowledge (in terms of prior knowledge, knowledge of cooperative procedures, vocabulary meaning, and language structure), students' motivation, learning materials, learning strategy and/or meta-cognition strategy. For this reason, carrying out cooperative learning without considering scaffolding for students with low ability is not enough to improve reading comprehension. Therefore, in the current study I am interested in examining effect of scaffolding in reading comprehension gain in cooperative and individual learning conditions.

2.5 Attitude towards group work

Attitude towards group work (ATGW) is a factor to be considered in the context of a cooperative learning environment, because the success or failure of students may depend on what they feel, think, and do in their groups. Therefore, a review of the general theoretical base of attitude and empirical research in ATGW in relation to educational achievement, with an emphasis on the EFL context, is given in this section.

2.5.1 General overview ATGW

The concept of "attitude" is widely used in social and psychological research. The term denotes a "mental and neural state of readiness, organized through experience, exerting a directive and dynamic influence upon the individual's response to all objects and situations with which it is related" (Allport, 1935: 810). Banaji and Heiphetz (2010: 348-9) state that attitude comprises "all forms of preferences and evaluations, measured in a diversity of ways, toward all manner of things, events, ideas and people." Thus, "attitude" is an abstract concept and is a widely latent and multidimensional construct related to human response to everything in such conditions. The "latent and multidimensional construct" means that the concept cannot be observed directly through empirical observation, but should be interpreted from an individual's response to something, someone, or some situations.

The construct of attitude consists of three components, i.e. affective, cognitive (belief), and conative (behavior) (Banaji & Heiphetz, 2010). The tripartite components of attitude, as stated by Lambert and Lambert (1973) are structured in a consistent way of thinking, feeling, and reacting to such objects, individuals or groups of people, or social issues in such circumstances. Hogg and Vaughan (2005:150) argue that attitude is a "relatively enduring organization of beliefs, feelings, and behavioral tendencies towards socially significant objects, groups, events or symbols." In this definition, "beliefs" represent a cognitive component and "feelings" an affective component. These psychological tendencies, according to Eagly and Chaiken (1993), can be shown by evaluating a particular object with some measurement scale like "favor" or "disfavor" and attitude can be defined as the "simple associations between an object and its evaluation" (Fazio et al., 1986).

To evaluate the object, someone needs to organize his/her feelings (affection), thoughts (cognition), and behavior (conation) based on his/her judgments or responses to the object. The evaluative judgment can be manifested in forms of "like and dislike" (Schwarzz & Bohner, 2001: 4; Ajzen, 2001: 28), "good and bad", "harmful and beneficial", "pleasant and unpleasant" (Ajzen, 2001: 28), "satisfied and dissatisfied" or "favor and disfavor" (Eagly & Chaiken, 1993: 1).

Thus, attitude can be indicated by what someone is feeling, thinking, and doing through evaluative responses related to the object. For example, the attitude towards "group work" can be indicated by affective responses during the group work. For example, in a discussion the nodding of the head by one participant can be argued to represent a behavioral response which indicates that the listener understands what the speaker said. This affective response through overt behavior indicates the participant's attitude, which can affect another condition related to the response, e.g. achievement in learning. It can be argued that a student's satisfaction or dissatisfaction with the group work may affect success or failure of the students in their effort to comprehend the text. Fishbein and Ajzen (1975) believe that attitude determined by behavior eventually has an effect on the gain. In a specific context of group work such as in reading comprehension, such an attitude towards the group work can be indicated by the students' responses through indicators such as "like" or "dislike", and "negative" or "positive" responses to what they felt, thought, and did during the group work learning activity.

2.5.2 The dynamics of group work

A person's attitude towards group work does not come about in isolation, but through the interaction of the various group members during group work. Forsyth (2014: 4) defines a group as "two or more individuals who are connected to one another by and within social relationships". These relationships are unique and complex, and individuals can be influenced by others and the other way around (Shaw, 1981). McGrath, Arrow, and Berdahl (2000: 98) consider groups as "complex, adaptive, and dynamic systems", which are "characterized by multiple, bidirectional, nonlinear causal relationships." This view represents the current social psychological views towards groups and suggests that group work processes may be unpredictable,

may develop over time, and are not always connected in a linear relationship. Therefore, to study the effect of group work, we need to be aware of the complexity of interrelationships among the members in a group.

According to Forsyth (2000: 18), we can assume that it is possible to investigate groups from a "group-level" or "individual-level" perspective. A group-level analysis tends to emphasize sociological perspectives and sees the individual as a subcomponent of a bigger system such as a group, organization, institution, or society. Conversely, an individual-level perspective tends to focus on psychological factors such as motivation, personality, behavior, and affective or cognitive dimensions of the individual within the group.

However, focusing only on one of the perspectives in the analysis might make the analysis less powerful in explaining the dynamics of the group as a whole complex system. Therefore, it is necessary to consider the integration of the group-level and individual-level in a "multilevel analysis of groups" as suggested by Hackman (2003). In this perspective it is believed that "individuals are nested in groups, the groups nested in larger social units…" (Forsyth, 2000: 20). Thus, the individuals' behavior, affection, and cognition can be influenced by the group and can influence the group in turn.

By focusing on the individual-level we can observe a student's behavior, affection, and cognition, such as the willingness to share ideas, help others, listen to others, and how they feel and think about their groups. By focusing on the group-level we are able to explore, for example, in which conditions the group works most effectively, such as in a group that encourages members to be accountable for their contribution in the group, is cohesive and makes each of the members feel free in rejecting or accepting different ideas from others, treats each other nicely, and encourages the members to talk and make suggestions.

2.5.3 Empirical studies of attitude

There are numerous studies related to the effect of attitude on academic gain in an educational context. However, there are only a few studies that focus on the specific relationship between attitude towards group work in an EFL reading comprehension context and these will be reviewed below.

Suhendan and Aksu (2014) focused their study on attitude towards cooperative learning in an ELT context. Participants were 166 university

students between the ages of 18 and 20 years at different faculties in Turkey. Data were both quantitative, using two scales in a questionnaire ('agree' and 'disagree'), and qualitative in focus group interviews. The questionnaire asked about the students' attitude towards cooperative learning and individual learning, and the interview was administered to 8 male and 8 female voluntary students. The study showed that 66.9% students had a positive attitude towards group work in ELT classes, while 33.1% of the students preferred working individually. These findings suggest that students may have very different views on cooperative learning, which could affect their work in groups.

Ghaith and Bouzeineddine (2003) focused their study on examining the effect of attitudes on achievement and students' perceptions in a cooperative learning environment. They also examined gender and the level of achievement factors (high-low achievers). 111 students from a middle school in Lebanon were randomly selected as the sample. The data were collected from a pretest and posttest in reading comprehension, questionnaires, and a semantic differential scale for attitude assessment and perception of cooperative learning experience. The questionnaire and semantic differential scale were given at the beginning of study after the pretest. The questionnaire for students' perception on CL learning was given at the end of study after the posttest. The data were analyzed statistically using descriptive statistics, correlations, and two multivariate analyses of covariance (MANCOVA). The most relevant finding was that attitudes positively impact reading achievement. There was no effect of attitudes on the students' perceptions in the cooperative learning experience. As far as the high and low achievers are concerned, the study shows that cooperative learning is seen as more advantageous by the low achievers than the high achievers. In other words, the low achievers feel more comfortable with their cooperative learning experience than the high achievers. However, the positive perception is not related to achievement in reading comprehension.

Alharbi (2008) examined the effectiveness of cooperative learning in the context of learning English as a second language, especially in relation to reading comprehension gain, attitude towards cooperative learning, and students' motivation in reading. The study emphasized the effect of cooperative learning on the students' performance in reading comprehension, attitudes, and motivation in reading English. The study had a pretest - posttest experiment design. The participants were 60 students of the ESL Saudi High School in Arras city. Data were analyzed statistically using ANCOVA to evaluate the

differences between the experimental group and the control group. The important finding from this study is that there was a significant difference between the experimental and the control groups in reading comprehension performance and attitude towards cooperative learning. Based on the mean differences of the two groups, the experimental group outperformed the control group. Performance in reading comprehension and attitude towards cooperative learning were positively impacted by the cooperative learning treatment. This suggests that cooperative learning provides a transfer effect on the improvement of reading performance and attitude towards cooperative learning.

Other studies that support the link between attitude and achievement in English can be found in Khan (2011), Haque (1989), and Kok (2010). Khan (2011) studied the relationship between attitude towards learning and achievement in English. The main purpose of the study was to explore the relationship between attitudes and students' achievement, especially in English speaking competence. Data was collected by observation and questionnaires. This study employed a qualitative approach. Therefore, there is no test to measure students' achievement in this study. The students took part in group discussions to talk about common topics such as nutrition or mental illness. The data were analyzed and interpreted qualitatively. The study shows a positive relationship between the students' attitude towards English and learning with students' achievement in English.

Haque (1989) also found that a gain in English was determined by favorable attitudes towards language learning and a strong motivation in learning. The data were collected from 240 10-th grade students of high schools, their parents, and 30 English teachers in Dhaka. Research instruments were adaptations of Gardner's Attitude/Motivation Test and an Achievement Test developed by the Bangladesh government through an English Language Teaching Task Force. In addition, questionnaires were developed from Colletta (1982) to collect information from the parents. The data were analyzed statistically based on a frequency-distribution calculation, Pearson's product-moment correlations, a t-test, and factor analysis. The results revealed that attitude towards learning can be considered a predictor of students' gain in English.

Kok (2010) studied the effect of the language curricula designed in compliance with the principles of representational systems, which is considered as a model examining how human mind processes information in neuro-

linguistic programming (NLP), on the students' reading comprehension achievement and their attitudes towards learning English with regard to brain dominance and reading strategies. A total of 40 students (14 female, 26 male) from a university preparatory class participated in this study. The study was conducted in the spring time term 2008/2009. The study was based on a randomized pretest-posttest control group design using data from multiple choice tests for reading achievement and five scales Likert-type questionnaires for the attitude data. Reading achievement and attitudes towards learning were dependent variables and teaching practices based on the principles of representational systems, which emphasize students' brain dominance and reading strategies, were the independent variables. Then, reading comprehension and a vocabulary test, an attitude scale, a brain dominance inventory, and a reading strategy inventory were applied in this study. The data were statistically analyzed using a t-test. The study reveals that there is no significant difference between the experimental and control groups in reading comprehension achievements, but there is significant different in the attitudes towards learning English.

Bastug (2014), however, supports the importance of attitude in relation to reading comprehension and academic achievement. The study examines to what extent attitudes towards reading and reading comprehension affect academic achievement. A reading attitude scale for secondary level, multiple-choice questions, a cloze-test, and open-ended questions were used as instruments to collect data on attitude and reading comprehension. Scores in Mathematics, Sciences and Social Sciences were used as data for the academic achievement. These scores were obtained from students' scores in homework, classroom participation, students' projects, and written examinations for grade points in their academic achievement at the end of 2012-2013 academic year. A total of 487 fourth grade students and 541 fifth grade students at four state-run schools in Turkey participated in this study.

To measure reading comprehension achievement, the participants of each class were asked to read one narrative text and one expository text in Turkish language textbooks. The texts consist of 350 words on average. The unfamiliar texts for students were selected as reading material for the two classes. After reading the text they were asked to answer 10 multiple-choice questions. The questions included domains of recall, comprehension, analysis, synthesis and evaluation. Furthermore, four cloze-tests and five open-ended questions for

each text were also used to examine students' comprehension individually. Next, 25 items of a reading attitude scale were administered. Through confirmatory factor analysis, the attitude scale 17 items can be extracted, including 3 subscale factors measuring general reading attitude, attitude towards books, and recreational reading attitude. Based on factor analysis and structural equation modeling analysis, the study revealed that reading attitude can be used as a significant predictor of reading comprehension. Furthermore, academic achievement can be significantly predicted from reading comprehension. This means that students who have positive attitudes towards reading will have a higher score in reading comprehension and academic achievement.

However, not all research findings in this context demonstrate positive findings. In investigating a causal relationship between attitude and achievement in mathematics and reading in elementary school students, Quinn and Jadav (1987) found that there was no significant relationship between attitude and achievement. This study examined the possibly causal relationship between attitude and achievement in reading, vocabulary, and mathematics for elementary school students by using cross-lagged panel analysis. This analysis measures a panel of subjects on two or more variables at two or more points in time. Three types of correlation were employed in data analysis: synchronous correlation, auto-correlation, and cross-lagged correlation (Quinn & Jadav, 1987). The first type is a correlation between two different variables, which was examined at the same occasion. The second is the correlation between the same variables measured at the different times.

In this review I am only concerned about the relationship between attitude and achievement in reading and vocabulary. In Quinn and Jadav's (1987) study, 25 second-grade classes (139 students) and 21 fifth grade classes (122 students) participated. To measure attitude towards reading, attitude scales consisting of 11 items with five-point scale responses were employed. To measure reading achievement and vocabulary, the Gates MacGinitie Reading Test (MacGinitie, 1978) was administered. Altogether with attitude scales, these tests were conducted three times. The first test was conducted on October 1976. The second one was tested two months later, and the third one was tested five months later for each grade. The study revealed that there was no causal relationship between attitude and achievement in reading and vocabulary for all grades they have studied. This suggests that like or dislike in reading does not affect reading achievement.

2.5.4 Synopsis ATGW

To summarize, to study attitude towards group work and reading comprehension gain, I may focus on the individual-level by considering the fact that students' behavioral, affective, and cognitive aspects are influenced by the dynamics of the group. Vice versa, the effectiveness and team work within groups, which are indicated by positive interdependencies, may affect the individual's perception and gain.

In addition, even though there have been mixed findings, there is a possible relation between attitude and achievement. Most studies in an ESL/EFL context support the existence of a positive effect of attitudes on students' gain. Therefore, the present dissertation is carried out to verify the effect of attitude towards group work on reading comprehension and vocabulary gain. For the individual-level I will see whether individual contribution and individual roles in a group (individual accountability) have an effect on reading comprehension and vocabulary gain. For the group-level, I will examine whether group processing provides a significant effect on the gain.

2.6 Summary chapter 2

Here, I briefly summarize the points of the present chapter and its implications for my research: first, reading is an interactive process involving complex relationships between reader, text, and context. Reading has a close relationship with vocabulary knowledge. In this sense, reading activities help incidental vocabulary acquisition. Increasing comprehension will be followed by an increase in vocabulary knowledge. Therefore, in the current study I will compare the effect of scaffolding on reading comprehension and vocabulary knowledge gain.

Second, in order to improve reading comprehension achievement and skills, appropriate strategies are required. Scaffolding worksheets consisting of comprehension questions can be considered to help students reach higher and deeper comprehension in groups or individually.In the other words, scaffolding can take place at the individual, small group or large group levels. In the current study, I will compare the effect of scaffolding at the individual and small group levels working cooperatively. In order to utilize cooperative learning in reading comprehension, a teacher needs to manage his or her classroom so that students

can work together in small groups and has to give support individually to all of groups to reach better comprehension.

Third, attitude may influence learning achievement, including reading comprehension and vocabulary gain. In the cooperative learning condition, attitude towards group work, how students behave, do, and think in groups may have a relationship with reading comprehension and vocabulary gain.

Fourth, previous studies show that (1) reading comprehension has an inconsistent relationship with vocabulary knowledge. On the one hand, some researchers found a relationship between reading comprehension and vocabulary knowledge, on the other hand, the relationship between those was small and depended upon other factors such as topic familiarity, attention, or frequencies of words exposure in the text; (2) scaffolding provides a positive effect in improving reading comprehension gain and vocabulary knowledge; (3) there were mixed findings in cooperative learning: a significant effect, no significant effect, or only a benefit for low ability students; and (4) mixed findings in relationship between attitude and achievement. However, most studies in an ESL/EFL context support the existence of a positive effect of attitudes on students' gain. Therefore, the current study was conducted to further explore the relationship between attitude towards group work, reading comprehension, and vocabulary gain.

Chapter 3

Study 1

Effect of scaffolding on reading comprehension and vocabulary knowledge

3.1 Introduction

This study is a pilot study for Study 2. In the current study not only the results, but also the procedures and materials are of interest, as they will be used to improve Study 2. Both Study 1 and Study 2 examine the effect of scaffolding on reading comprehension and vocabulary gain in an EFL classroom in two conditions: cooperative and individual learning.

As pointed out in the background literature, there are several reasons to consider scaffolding and cooperative learning as being beneficial to reading comprehension and vocabulary gain. Several studies have shown that scaffolding and cooperative learning are effective in EFL reading comprehension and that they benefit lower level students especially, but there are also contradictory findings.

However, one complicating factor that may explain the different findings is the fact that studies may measure effects differently. For example, students can work in a small group on a text and (a) cooperatively answer test questions, (b) cooperatively work on the text and individually answer test questions, (c) cooperatively work on several texts over time and then individually read a new text and answer test questions. We argue that in (a) the reading comprehension test is seen as a group task and measures the effect of group work, but not the reading comprehension skills of the individual. In our experiments we will not explore these task effects. In (b) the reading comprehension level of the text that has just been discussed in the group is tested and the level of understanding of the text may have benefitted from the treatment. We will call this an immediate effect. In (c) the reading comprehension test concerns a new text which the individual has to read and understand without the immediate benefit of the treatment. We will define this as a transfer effect. It is useful to measure both

the immediate and transfer effects of scaffolding and cooperative learning to explore where possible effects may be found.

3.2 Research questions

The main research questions for Study 1 are formulated as follows:

1. Does scaffolding in a cooperative learning condition have a transfer effect on reading comprehension?
2. Does scaffolding in an individual learning condition have a transfer effect on reading comprehension?
3. Does scaffolding in a cooperative learning condition have an immediate effect on reading comprehension?
4. Does scaffolding in an individual learning condition have an immediate effect on reading comprehension?
5. Does scaffolding in a cooperative learning condition have an effect on vocabulary retention?
6. Does scaffolding in an individual learning condition have an effect on vocabulary retention?

3.3 Design

A longitudinal design is applied in this study with three groups in three conditions:

- The Scaffolding Cooperative Learning (SCL) group worked in small groups of five and used scaffolding questions to comprehend the texts.
- The Scaffolding Individual Learning (SIL) group worked individually and used the same scaffolding questions as the SCL group.
- The control group, the individual learning (IL) group, worked with the same texts as in the two experimental conditions, but the students did not receive scaffolding questions. Instead they were asked to work on their own with the texts and look up difficult words in the dictionary when needed and ask questions if they did not understand a word or passage. Questions generated by the students were written on the whiteboard and answered through class discussion.

The participants received a pretest, three intervention treatments followed by tests for immediate effects, and a posttest for transfer effects.

Table 3-1. The experimental design

Week	Action	Experimental groups		Control group
		Cooperative	**Individual**	**Individual**
1	Pretest	RC Test Voc. Test	RC Test Voc. Test	RC Test Voc. Test
2	Intervention Immediate test	Scaffolding RC test	Scaffolding RC test	Dictionary use Student-generated questions RC test
3	Intervention Immediate test	Scaffolding RC test	Scaffolding RC test	Dictionary use Student-generated questions RC test
4	Intervention Immediate test	Scaffolding RC test	Scaffolding RC test	Dictionary use Student-generated questions RC test
5	Posttest	RC Test Voc. Test	RC Test Voc. Test	RC Test Voc. Test

RC=reading comprehension; Voc=vocabulary

3.4 Participants

The participants for this study were undergraduate students of English Education at the Faculty of Teacher Training and Education, Jambi State University in Indonesia. They were trained to be Junior or Senior High School teachers of English. There were 75 students (60 females and 15 males) ranging in age from 19 to 21 years old. Three classes were selected. Two classes were randomly assigned as experimental groups (SCL and SIL) and another class as a control group (IL). The three groups were assumed to have a similar reading level, because they were enrolled in the university at the same time and they

were in the same semester. However, to be sure pretest scores were used to determine equivalence and gain scores were used in comparisons.

Before entering university, the students had been studying English as a subject at Junior and Senior High School for six years with a minimum of four times forty-five minutes per week. English is only used in the English class. Most of the students are speakers of various indigenous languages (local languages with numerous dialects), and the Indonesian language is regarded as their L2 and lingua franca.

The participants were enrolled as students in the Reading II course in the academic year of 2009/2010. They have to take 5 Reading courses: Reading I, II, III, IV, and an extensive one. The Reading I course included the competencies that are necessary to read texts and themes, to guess meaning from context, to recognize reading structure, to understand details, to apply scanning and skimming skills, to build vocabulary and to learn grammar at an elementary level. The Reading II course builds further on the skills in the Reading I course and focuses also on recognizing different text structures, understanding details, building vocabulary and learning grammar at the low intermediate level. Because all participants had already taken and passed for the Reading I course in the previous semester, we assumed that they were more or less at the same reading level.

The language of instruction in the class is English combined with Indonesian when students do not understand some expressions or sentences in English.The three groups were taught by the same teacher in the same amount of time.

3.5 Materials

The materials used in this study were adapted from selected texts and multiple choice questions of the HAVO central (literally means: "higher general continued education") English exams. The test is a final reading comprehension test developed by the Dutch Ministry of Education, Culture and Science. The texts are selected and professionally constructed by a team of experts in a carefully controlled procedure and are pretested to make sure that the questions are reliable. The current study selected 5 texts of about equal length with about 10 multiple choice questions each.

The five texts are as follows: 1. “Flirting”, 2. “The Beauty of the wind farms”, 3. “The fat of the land”, 4. “Taking our leaders at face value” and 5. “Why are phones replacing cars”, (see appendix A). The first text was used for the pretest, the next three for the intervention treatment and the last for the posttest.

3.5.1 The scaffolding worksheets

Each intervention text was accompanied by a worksheet with scaffolding questions. The scaffolding questions were constructed by the researcher, who has teaching experience with the target students, and who anticipated language or cultural problems the students may have with the text. Depending on the text, the questions dealt with activating background knowledge, giving meanings of difficult words, guessing meaning from context (often with extra hints), drawing inferences, finding main ideas, finding supporting detail, and thinking critically.

The following example is part of a worksheet which consisted of a reading passage entitled “The beauty of wind farms” (David Suzuki), and the appropriate scaffolding questions. The answer key is given in italics. (See Appendix C for the entire set of worksheets).

Example: First paragraph of first intervention text

The beauty of wind farms
(David Suzuki)

1. OFF the coast of British Columbia in Canada is an island called Quadra, where I have a cabin that is as close to my heart as you can imagine. From my porch on a good day you can see clear across the waters of Georgia Strait to the snowy peaks of the rugged Coast Mountains. It is one of the most beautiful views I have seen. And I would gladly share it with a wind farm.

(Retrieved from http://www.examenblad.nl/examen/ engels-havo/2007)

The scaffolding questions and the main objectives for each question are presented in Table 3-2.

Table 3-2. Scaffolding questions for the text as a whole and the first paragraph

	Questions and answer key	**Main objectives**
1	This article is about wind mills, what are they and how do they look? Do you think people like to look at them? Why (not)? ***Wind mills are very tall towers with a blade that generates electricity. Many people believe that they make the environment look ugly.***	Activating students' background/prior knowledge. Note: There is also a wind mill picture in the text.
2	We all know that the climate is changing because we consume too much energy. Do you know some negative influence of this on the environment? ***When the climate changes we will have floods, droughts and other natural disasters.***	Activating students' background/prior knowledge. Engaging students by making them to think about the main causes and negative effects of climate change.
3	Can you name some environmentally sound solutions to produce green energy? ***Some would be to use sun, wind or water power.***	Activating students' background/prior knowledge. (Clues for knowing resources of green energy as an alternative solution for environment problem.)
4	Question for paragraph 1 The writer has a cabin (vacation house) somewhere. Where is it located? What is a porch? How does the environment look? Does the author like this place? ***The cabin is on a small island near Canada. A porch is a kind of veranda directly outside the house. The environment and view is beautiful. He loves this place very much.***	Difficult words explained. Guess meaning from context. Finding supporting detail. Find main idea of paragraph

3.5.2 The reading comprehension test

The reading comprehension tests were the tests originally designed for the HAVO exams. The test consisted of a reading passage with about 10 multiple choice questions. If there were fewer than 10 questions, the researcher added a few to keep the numbers of questions similar per text. The multiple choice tests were administered after the students had worked cooperatively or individually. The multiple choice test was done by each student individually.

The multiple choice questions are aimed at measuring students' ability to find main ideas, support ideas, make inferences and make connections between ideas. Note that the scaffolding questions and multiple choice questions are quite different, as the scaffolding questions usually deal with activating prior knowledge, close reading and in depth understanding of the text itself. The multiple choice questions are often of a higher order, as exemplified in the first question of the test, where the author's intention is questioned.

The following is a sample of the multiple choices reading comprehension test for the text "The beauty of wind farm". Question 1 was part of the original test. Question 2 was constructed by the researcher.

Sample multiple choice questions

Choose the correct answer by crossing the letter!

1. What is the function of paragraph 1 in view of the rest of the article?
   To make clear that the writer
   A. has no objections to wind farms being part of the landscape.
   B. is the proud owner of a holiday home in the Canadian countryside.
   C. supports the protection of the Canadian natural landscape.
   D. very much enjoys the scenery surrounding his holiday home.

2. According to the writer's description in paragraph 1, what does the environment look like?
   A. exciting
   B. cool
   C. ordinary
   D. gorgeous

3.5.3 The vocabulary test

Since there is a close relationship between reading comprehension and vocabulary, the same 20 item vocabulary test is included in the study as part of the pretest and posttest. The vocabulary items were selected from the three texts used in the intervention (see the appendix B).

3.6 Validity and reliability of the tests

The HAVO tests were constructed by a team of experts in a carefully controlled procedure and were pretested to make sure the questions are reliable. The tests were constructed to measure reading comprehension in English; therefore, the tests can be assumed to have high content validity. The vocabulary test selected items from the three intervention texts and multiple choice questions were constructed by the researcher.

An item analysis was conducted to examine difficulty level of pretest and posttest. The test revealed that pretest items had index of difficulty level=.497 (rounded .50) for 10 items (n=56). Posttest items had index of difficulty=.527 (rounded=.53) for 10 items (n=56), which mean that pretest and posttest are comparable in difficulty level.

A reliability analysis for 20 items through SPSS 17 showed that the reading comprehension items had a coefficient of alpha=.70 (n=75) and the vocabulary test had an alpha=.73 (n=75), hereby both exceeding the Nunnally (1978) criterion.

3.7 Procedures

After the three groups were assigned, a meeting with the participants in their classes was organized. During the meeting the details of the experiment were explained and a schedule of all the activities was distributed. The dates of the pretest and posttest and the rules of the class during the treatments were agreed upon.

3.7.1 Pretest

The pretest was administered to the 3 groups in the same week. The test consisted of 1 reading passage with 10 multiple choice questions, where each correct answer was worth one point. The test took 40 minutes. After the reading

comprehension test, a 20-item multiple-choice vocabulary test was administered. This test took 20 minutes. The results of the reading comprehension pretest were also used to form heterogeneous groups in the cooperative learning condition.

3.7.2 The intervention

The study took place from the third week of April until the second week of June 2010. Each group (SCL, SIL, and IL) met according to the university time schedule for 2 X 50 minutes a week. Each group learned according to its own method.

The SCL group worked in small heterogeneous groups with the ability levels based on the pretest reading comprehension scores. Each group consisted of 5 members and each member had her/his own role: the role of a leader, a writer, a reader, a speaker or a checker. The teacher assigned the specific roles to ensure that all individuals in the groups were accountable for their contribution in the groups.

A group leader was responsible for managing the teamwork and monitoring the group interaction, i.e. making sure that everyone did what they were supposed to do, giving a turn to his/her members to speak, and making sure that time was managed well. A writer was responsible for making notes of all the activities in the group, reformulating the answer everyone agrees on and writing it down. The reader was responsible for reading out the correct answer on the answer sheet and deciding if the group answer and the answer on the answer sheet were similar. There was one speaker who had a specific task of being a spokesman who represents the group and who communicates to other groups or to the teacher. A checker was responsible for checking the members' answer and correcting wrong answers.

The sequence of activities was as follows: the students read the text silently for a few minutes and then they were given a worksheet consisting of scaffolding questions, which helped and guided them to have a better understanding of the text. They worked on the worksheet together for 40 minutes. They discussed approaches to answer all the questions and might argue for the best answers. They were encouraged to help each other and teach their team-mates, so all would do well on the subsequent test.

After 40 minutes, they were instructed to stop this activity. The next 10 minutes were given to check the answers with the key provided then by the researcher. One of the members, the reader, read the correct answer from the key answer sheet, whereas the checker checked the workgroup's answer and the writer made notes on their worksheet and wrote the correct answer when the answer was wrong and eventually the group leader made sure that all members of the workgroup understood and agreed on the correct answers. The worksheets were collected before the students took the multiple choice test.

The multiple choices reading comprehension test of the text the students had just read and discussed in their work groups was administered for immediate effect. Although the students had studied together, they were not permitted to help one another during the test. They worked on the test individually for 40 minutes. The same cycle of intervention treatment and immediate tests was repeated three times.

The second experimental group (SIL) basically went through the same cycle of intervention treatment and immediate posttest. The only difference was that the students worked on their own and answered the scaffolding questions individually. After 40 minutes of working on the questions, the students checked their answers by comparing it with the key for 10 minutes. The control group (IL) was clearly different in that they received neither scaffolding questions nor group work. The students worked on their own. However, it was important to keep the amount of time spent on the task the same as in the experimental condition. Therefore, the students received the texts and were instructed to look up difficult words in the dictionary. If the dictionary did not offer enough help, the students would write down questions about words or passages on the whiteboard. During the 50 minute reading, student generated questions were discussed in the class when needed. After 50 minutes, the students took the same multiple choices reading comprehension test as the two experimental groups. They were not allowed to use their notes or the summary they made during the reading activities while doing the test. Table 3-3 summarizes the procedures.

Table 3-3. Activities and procedures in SCL, SIL and IL groups

Time	Action	Experimental groups		Control group
		Cooperative	**Individual**	**Individual**
5’	Pre-reading	Welcome Brief outline of objectives and procedures.	Welcome Brief outline of objectives and procedures.	Welcome Brief outline of objectives and procedures.
50’	Whilst-reading	Groups work on worksheets. Compare answers with answer key.	Individuals work on work sheets. Compare answers with answer key.	Individuals read text with help of dictionary and questions to the teacher.
40’	Post-reading	Comprehension test	Comprehension test	Comprehension test

3.7.3 Posttest

After the pretest and the three intervention treatments, a posttest was administered to measure the transfer effects of the treatments. The posttest consisted of a new text with 10 multiple choice questions. It was similar in size and difficulty to the pretest and intervention tests. 40 minutes were allocated to complete the test. After the reading comprehension test, the 20 minute post-vocabulary test was administered. This test was exactly the same as the one administered in the pretest. As all the vocabulary items in the test were derived from the three intervention texts they had read and studied during the treatments, the test was meant to see how many words the students had retained from the reading.

3.8 Data Analysis

To examine whether pretest and posttest were similar in difficulty level, an item analysis was conducted to measure a level of difficulty index by dividing the number of correct answers by the total of students who took the test. This

procedure is commonly used in measuring a difficulty index of the test items. The difficulty index can be determined by criterion: below 0.25 = difficult; 0.26 to 0.74=average; and above 0.75= easy.

To examine the differences in transfer effects in reading comprehension and vocabulary gain between the SCL, SIL, and IL groups, a one-way between groups analysis of variance (ANOVA) was used. In this design, reading comprehension and vocabulary gain were the dependent variables. Gain scores were calculated by posttest minus pretest scores. The independent variable was group with three levels (SCL, SIL, and IL).

To investigate both the immediate and transfer effects of treatment, a mixed between-within subjects analysis of covariance (ANCOVA) was used. In this design, SCL, SIL, and IL groups (independent variables) were subjected as between-subjects variable, and reading comprehension scores (5 tests) as a within-subject variables. Pretest was used as covariate. The five tests included the pretest, 3 immediate intervention tests and the posttest.

To examine the main effects of each independent variable and to see whether there was an interaction between the variables the following operationalizations were used. The main effect of the intervention times is determined by the increase or decrease mean difference in reading comprehension scores across the 5 tests in each group. The effectiveness of group was determined by comparing the mean scores between SCL, SIL, and IL across the 5 tests of the reading comprehension scores. Pretest was used as covariate.

3.9 Results

The first section deals with the transfer effects in reading comprehension. The second section deals with both immediate and transfer effects. The third section presents the results on vocabulary gains.

An items analysis was conducted to see the level of difficulty index of 10 items of pretest and 10 items posttest of reading comprehension. Level of difficulty index was determined by dividing the number of correct answers by the total of students who took the test. This procedure is commonly used in measuring difficulty index of the test items. The pretest and posttest have been tested to the 56 students with the similar ability. The results are summarized in the following table.

Table 3-4. Level of difficulty index of pretest and posttest

Item	Level of difficulty index	
	Pretest	Posttest
1	.43	.53
2	.59	.51
3	.70	.64
4	.66	.62
5	.41	.50
6	.39	.57
7	.54	.50
8	.50	.48
9	.20	.48
10	.55	.44
Total	.497	.527

Note: ≤ .25 = difficult
.26 – .74 = moderate
≥ .75 = easy

The test found that pretest level of difficulty = 0.50 (moderate) and posttest level of difficulty = 0.53 (moderate). This suggests that both of the tests have the same level of difficulty. In addition, an analysis level easiness/difficulty of text was conducted to measure level of readability text for pretest and posttest. The results are summarized in the following table.

Table 3-5. Difficulty level of the text for pretest and posttest

	Pretest text	Posttest text
Number of words	417	471
Average of syllables per word	1.5	1.6
Average of words per sentence	22	18
Flesch reading ease scores*	58	55

Flesch reading ease scores indicate the level of easiness of the text based on a formula developed by Flesch (2014). Here, the average sentence length is multiplied by 1.015, then the average word length is multiplied by 84.6, and the two numbers together are then subtracted from 206.835. Flesch index scores for

pretest (58) and posttest (55) were in the same range as a fairly difficult English text.

3.9.1 Transfer effects reading comprehension

A descriptive analysis was conducted to show mean differences in reading comprehension gain (posttest minus pretest scores) among the groups. The result is summarized in table 3-6.

Table 3-6.Descriptive statistics of SCL, SIL, and IL groups

	Group	N	Mean	SD	Minimum	Maximum
Pretest	SCL	25	5.28	1.43	2.00	8.00
	SIL	25	4.04	1.34	2.00	7.00
	IL	25	5.00	1.50	2.00	8.00
	Total	75	4.77	1.50	2.00	8.00
Posttest	SCL	25	6.04	1.54	3.00	9.00
	SIL	25	5.72	1.28	3.00	8.00
	IL	25	6.28	2.23	1.00	9.00
	Total	75	6.01	1.72	1.00	9.00
Gain	SCL	25	.76	1.69	-1.00	5.00
	SIL	25	1.68	1.91	-3.00	6.00
	IL	25	1.28	2.73	-5.00	6.00
	Total	75	1.24	2.16	-5.00	6.00

The descriptive data in table 3-6 suggests that the SIL group had higher gain scores than the other two groups. Preliminary analysis using Levene's test revealed that the assumption of homogeneity of variance of the three groups was not violated as indicated by $F(2, 72) = 3.085$, $p > .05$. Therefore, a one-way between groups ANOVA was performed. The test found no statistically significant differences between groups in transfer effects in reading comprehension, $F(2, 72) = 1.143$, $p > .05$, eta squared=.03 (small effect).

3.9.2 Immediate and transfer effects over time

To examine the effectiveness of intervention over time, a mixed between-within ANCOVA was used. This analysis was conducted to measure more transfer and immediate effect of scaffolding on reading comprehension skills of students in three different conditions: SCL, SIL, and IL. The score of tests are arranged in

chronological order. Time 1, 2, and 3 show the scores on the tests immediately after treatment, and time 4 is posttest score. Pretest score was used as covariate. The descriptive statistics are summarized in table 3-7.

Table 3-7.Descriptive statistics for RC scores of SCL, SIL, and IL groups

Time	Group	Mean	SD	Mean adjusted	Std.Error	N
1	SCL	5.44	1.42	5.49[a]	.318	25
	SIL	4.76	1.59	4.88[a]	.343	25
	IL	4.32	1.41	4.32[a]	.303	25
	Total	4.84	1.52	4.90[a]	1.86	75
2	SCL	5.16	1.21	5.02[a]	.330	25
	SIL	4.52	1.61	4.85[a]	.355	25
	IL	4.92	1.85	4.95[a]	.314	25
	Total	4.87	1.58	4.94[a]	.192	75
3	SCL	5.60	2.00	5.43[a]	.328	25
	SIL	4.60	1.35	4.95[a]	.354	25
	IL	5.44	1.42	5.53[a]	.313	25
	Total	5.21	1.65	5.30[a]	.192	75
4	SCL	6.04	1.54	5.85[a]	.369	25
	SIL	5.72	1.28	5.67[a]	.397	25
	IL	6.28	2.23	6.29[a]	.351	25
	Total	6.013	1.72	5.93[a]	.215	75

Furthermore, a mixed between-within subjects analysis of covariance (ANCOVA) was performed to examine the effect of interventions of the three different groups (SCL, SIL, and IL) on the increasing reading comprehension scores.

Preliminary analysis Mauchly's test was conducted to ensure that the assumption of sphericity was not violated. The test revealed, W=.936, χ^2 (5) =4.455, p>.05; therefore, after adjusting for pretest score (M^a=4.77) a mixed between-within subjects ANCOVA was conducted with sphericity assumed to examine effect time and group (SCL, SIL, and IL) on reading comprehension scores across 4 periods of time. The test found no significant interaction between time and group, Wilks' Lambda=.870, F(6, 134)= 1.609, p>.05, partial eta squared=.067. There was a substantial main effect of interventions time on increasing reading comprehension scores, Wilks' Lambda=.699, F(3, 67)=

9.629, p<.001, partial eta squared=.301 (very large effect). The main effect of group was not significant, F(2, 71)=1.735, p>.05, partial eta squared=.047 (small effect). There was no relationship between covariate and reading comprehension scores, F(1, 71)=3.833, p=.051, partial eta squared=.05 (small effect).

A post-hoc test Bonferroni was performed to further to examine which interventions provide an utmost effect on reading comprehension scores. The test revealed that there was a significant difference in reading comprehension scores between posttest (time 4) and immediate 1 (MD=1.17), p<.001, posttest and immediate test 2 (MD=1.15), p<.001, and posttest and immediate test 3 (MD=.80), p<.001. However, there was no significant difference in reading comprehension scores between immediate test 1 and 2 (MD=.03), p>.05, and immediate test 2 and 3 (MD=.35), p>.05 (figure 3.1). This suggests each group improved in reading comprehension over time as an effect of interventions, but there is no difference among the groups.

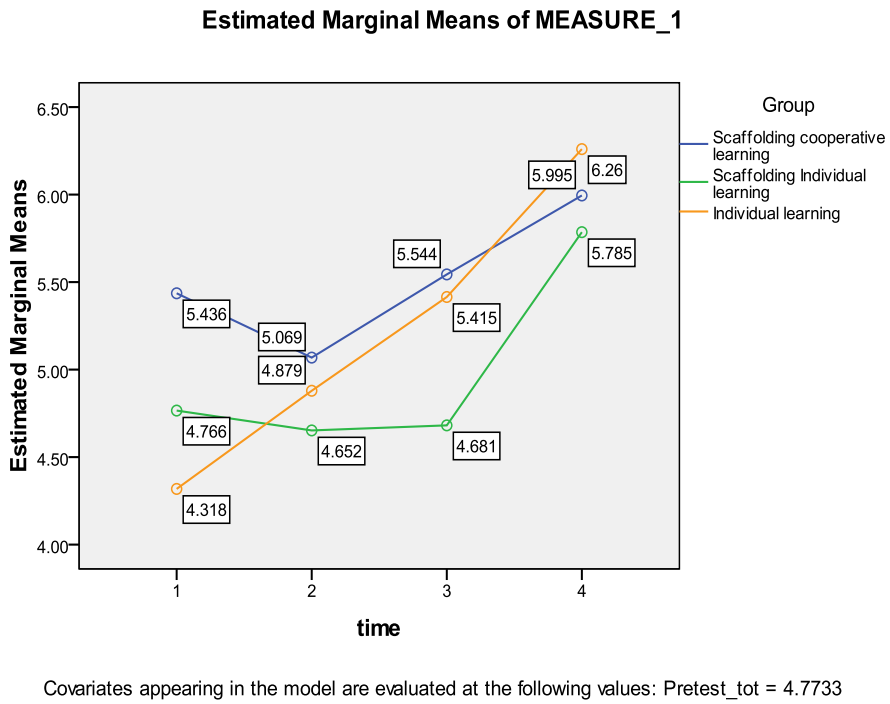

Figure 3-1. The differences of RC scores over the 4 periods of time

To summarize, the results suggest that the interventions significantly affect transfer of reading comprehension skills. However, the immediate effect of intervention was not found, nor was there a significant effect of group in the improvement of reading comprehension scores.

3.9.3 Vocabulary retention

The descriptive statistics of the pretest, posttest, and vocabulary retention of the SCL, SIL, and IL groups is summarized in Table 3-8.

Table 3-8. Descriptive statistics of SCL, SIL, and IL groups

		N	Mean	SD	Minimum	Maximum
Pretest	SCL	25	11.72	2.46	7.00	16.00
	SIL	25	11.72	2.32	7.00	15.00
	IL	25	10.40	2.69	4.00	15.00
	Total	75	11.28	2.54	4.00	16.00
stest	SCL	25	14.40	2.52	8.00	18.00
	SIL	25	11.04	3.18	3.00	18.00
	IL	25	11.00	4.08	3.00	17.00
	Total	75	12.15	3.65	3.00	18.00
Gain	SCL	25	2.68	2.32	-1.00	8.00
	SIL	25	-.68	3.59	-10.00	9.00
	IL	25	.60	4.58	-6.00	11.00
	Total	75	.87	3.83	-10.00	11.00

Table 3-8 shows the differences in mean scores of SCL, SIL, and IL groups in vocabulary gain (posttest minus pretest). The gain score of the SCL group looks greater than that of the other two groups.

The preliminary analysis using Levene's test revealed that the assumption of homogeneity of variance of the three groups was violated as indicated by $F(2, 72) = 6.33$, $p < .05$. Therefore, a one-way between groups ANOVA was performed. The test showed a significant difference in vocabulary gain at $p < .05$ level for the SCL, SIL, and IL groups: $F(2, 72) = 5.547$, $p < 0.05$. The effect size calculated by using eta squared (divide the sum of squares between-groups

by total sum of squares) was .09. This effect size was found to exceed Cohen's (1988) criterion for a medium effect.

A post-hoc comparison with equal variance not assumed by using Dunnet C test was conducted. The test found a significant difference in vocabulary gain between the SCL and SIL groups (MD=2.76), p<.05, but no significant difference was found between SCL and IL group (MD=1.76), p >.05. In addition, there was no significant difference between SIL and IL group (MD=1.00), p>.05. Figure 3.2 demonstrates the differences. The vocabulary gain in the SCL group was significantly greater.

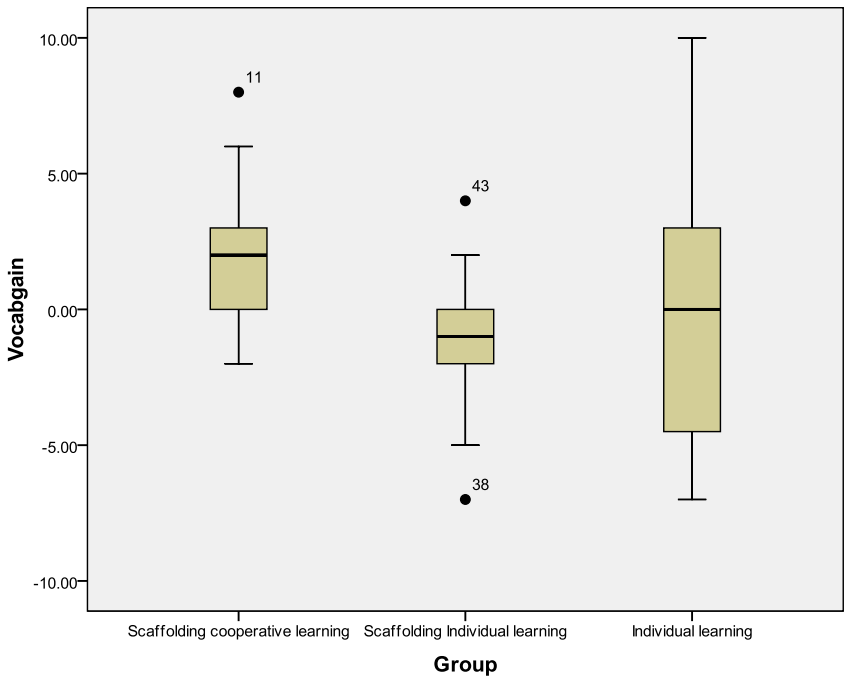

Figure 3-2. Box plot of vocabulary gain of SCL, SIL, and IL groups

Because the pretest score may have played a role in the development in vocabulary, a one-way between groups analysis of covariance (ANCOVA) was conducted.The independent variable was group with three levels (SCL, SIL, and IL), and the dependent variable was posttest scores of vocabulary. The pretest was used as covariate.

A preliminary test using Levene's test showed that the assumption of homogeneity of variance of the three groups was violated as indicated by F(2, 72) = 5.524, p<.05. The assumption of homogeneity of regression slopes was not violated as indicated by F(2,69)=.610,p>.05. Therefore, a one-way between groups ANCOVA was performed without assuming homogeneity of variance and assuming homogeneity of regression slopes. After adjusting for pretest scores of vocabulary, the test found there was a significant difference in the vocabulary scores between SCL, SIL, and IL groups, F(2, 71)=6.089, p<.01, partial eta squared=.146 (large effect). Pairwise comparisons by Bonferroni adjustment revealed there was a significant difference in vocabulary development from the pretest to the posttest between the SCL and SIL groups (MD=3, SE=.935), , p<.05 and the SCL and IL groups (MD=2.66, SE=.955), p<.05. Figure 3.3 shows the different developments of the three groups over time, with an increasing vocabulary score for the SCL group and decreasing scores for the SIL and IL groups.

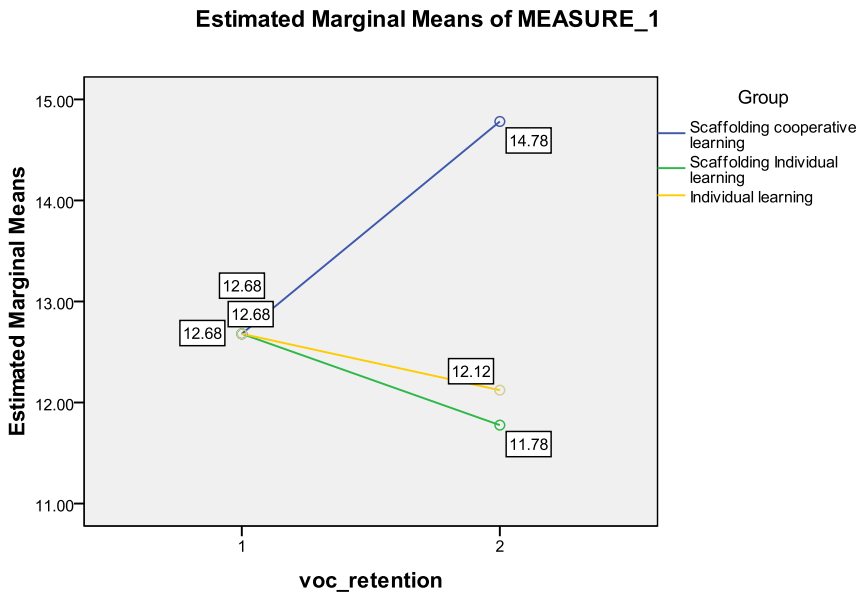

Figure 3-3. The difference of vocabulary scores of SCL, SIL, and IL groups

There was a moderate relationship between covariate, pretest in vocabulary, and posttest, $F(1,71)=6.906$, $p<.05$, partial eta squared= .089 (moderate effect). These indicated that 15% of the variance of vocabulary development was explained by groups, and 9% (rounded) variance of vocabulary gain was explained by the pretest, the covariate variable.

3.10 Summary and evaluation

To summarize, three groups were compared in reading comprehension and vocabulary gain. The Scaffolding Cooperative Learning (SCL) and Scaffolding Individual Learning (SIL) groups read treatment texts with the help of scaffolding questions. The Individual IL groups read the texts with the help of a dictionary. The experiment consisted of a pretest, three intervention treatments and immediate effect tests, and a posttest that measured transfer of skills. Several analyses were conducted. No significant difference was found in the transfer effect of reading comprehension (posttest score minus pretest score). This indicated that neither scaffolding nor cooperative learning provided a transfer effect on reading comprehension skills.

However, when we look over time at the more transfer and immediate effects of the conditions a different picture emerges: a strong main effect of intervention was found. The SCL and SIL group did not perform significantly better than the IL group. However, the SCL group gained significantly more vocabulary. From this preliminary study, I may tentatively conclude that either SCL, SIL or IL have a transfer effect.

However, even though the study was conducted with the utmost care and the results were interesting, there were also problems concerning student behavior and timing. The Indonesian students were not used to working cooperatively in teams of five and taking the initiative in discussing and solving problems. Therefore, it was decided to include some extra training time in Study 2, but to keep treatments as similar as possible, so all groups would receive an equal amount of training time in their own conditions.

Another problem was that it was difficult to think of meaningful roles for each member of the team of five. In the current study the roles were leader, a writer, a reader, a speaker or as a checker. The role of speaker was felt to be least meaningful and was eliminated. Moreover, in Study 2 the groups in the cooperative learning condition would consist of only four members.

As far as timing was concerned, the researcher observed that the students were not able to finish the scaffolding worksheets on time. The texts were quite challenging for the students, but as the better students obtained an 8 out of 10 for some of the tests and ceiling effects needed to be avoided, it was decided to keep them. The solution was to allow the students more time for working on scaffolding worksheets.

As the current experiment had flaws that needed to be resolved, there were no further analyses done on the data and the results will not be discussed in detail in the discussion.

Chapter 4

Study 2

Effect of scaffolding on reading comprehension, vocabulary gain, and different levels of ability

4.1 Introduction

Study 2 is in part a replication of Study 1, but with some changes to the experimental design. The materials used in Study 1 proved to be adequate but rather challenging to the students. In Study 1 it appeared that students were rushed to finish the worksheets and the comprehension test, so it was decided to allow more time per text. Another point was that the group size of five students was not always optimal. Students in Indonesia are not used to such a treatment and it took a while to get used to working in groups and taking roles in those groups. Moreover, not all the roles were equally meaningful; therefore, the group size was reduced to 4 members per group.

Based on Stockdale and Williams (2004) as well as Ghaith and Bouzeineddine (2003), I was also interested in the differential effects of scaffolding on students of different abilities. A cooperative learning condition provided a significant effect only for the low and average ability students. For the high ability students there was no significant effect. Therefore this study takes a closer look at the effect of cooperative learning and ability level.

Most of the procedures are the same as in Study 1, but they will be repeated briefly here and differences will be pointed out.

4.2 Research questions

The main research questions for this study are essentially the same as in Study 1. I added a question concerning the differences between low level and high level students in the treatments.

1. Does scaffolding in a cooperative learning condition have a transfer effect on reading comprehension?
2. Does scaffolding in an individual learning condition have a transfer effect on reading comprehension?
3. Does scaffolding in a cooperative learning condition have an immediate effect on reading comprehension?
4. Does scaffolding in an individual learning condition have an immediate effect on reading comprehension?
5. Do students of lower ability benefit more than students of higher ability from the various treatments?
6. Does scaffolding in a cooperative learning condition have an effect on vocabulary retention?
7. Does scaffolding in an individual learning condition have an effect on vocabulary retention?

4.3 Design

A longitudinal design is applied in this study. As in Study 1, there were two experimental groups and one control group. In the Scaffolding Cooperative Learning (SCL) condition, students worked in small groups of four on worksheets with scaffolding questions. In the Scaffolding Individual Learning (SIL) condition, students worked individually on worksheets with scaffolding questions, and in the Individual learning (IL) condition, students read the text without scaffolding questions, but they were encouraged to use dictionaries to look up difficult words and ask questions if a word or a passage were not clear.

The three groups were taught by the same teacher with the same materials during the same amount of time. The design is depicted in the table 4.1.

Table 4-1. The experimental design

Time	**Action**	**Experimental groups**		**Control group**
		Cooperative		**Individual**
		Individual		
Week 1	Pretest	RC Test Voc. Test	RC Test Voc. Test	RC Test Voc. Test
Week 2-7	Training /pre-intervention	Scaffolding RC tests	Scaffolding RC tests	Dictionary use Student generated questions RC tests
Week 8-13	Intervention 1, 2, 3	Scaffolding RC tests	Worksheet + RC tests	Dictionary use Student generated questions RC tests
Week 14	Posttest	RC Test Voc. Test Questionnaire	RC Test Voc. Test Questionnaire	RC Test Voc. Test Questionnaire

4.4 Participants

83 students aged between 19-21 years participated in this study. They were second-year students of English Education, at the Faculty of Teacher Training and Education, Jambi State University in Indonesia at the academic year of 2011/2012. As in Study 1 they were enrolled in the Reading II course. Before studying English in the English department, they had been studying English as a subject at Junior and Senior High School for six years with a minimum of four times forty-five minutes per week. However, as in Study 1, their English proficiency is low. From self-reported data, it was found that their TOEFL-scores (administered by the institution and for internal use only) were between 310 and 400 and their contact with English outside class was limited. Only 24% of the students reported being exposed to English outside classroom.

Statistically, the level of ability of participants in reading comprehension of the current study, as indicated from their pretest scores, is similar as participants of Study 1. A Levene's test indicated that the assumption of homogeneity of variance for pretest scores of study 1 and study 2 was not

violated as indicated by F (1, 156) = .005, p >.05. An independent-samples t-test with assuming homogeneity of variance to compare mean scores revealed there was no significant difference in pretest scores between study 1 (M=4.77, SD=1.50, n=75) and study 2 (M=4.41, SD=1.48, n=83); t(156)=1.53; p>.05 (two-tailed). This suggests that students' comprehension of the text tested was similar.

Most of the students are native speakers of various indigenous languages (Malay, Kerinci, Minang, Javanese, Bugis, and other local languages with numerous dialects). Indonesian is regarded as their second language and lingua franca. The language of instruction during the experiment is English combined with Indonesian when they do not understand expressions or sentences in English.

4.5 Materials

The texts used in the actual experiment are exactly the same as in Study 1. Three texts were used after the pretest and before the actual intervention study started to give students more time to get used to the procedures. In the current study there were 8 sets of *HAVO* English tests whereby each of the set consisted of 1 passage with 10 multiple choice comprehension questions. The eight texts are as follows: 1. "Flirting", 2. "The beauty of the wind farms", 3. "The fat of the land", 4. "Taking our leaders at face value", 5. "Why are phones replacing cars", 0-a "Farmers forced out so the lions can roam free", 0-b. "Helping hoodies hatch into good eggs", and 0-c. "I helped the police catch a thief".

The first five texts were used as study 1, the next three (text 0-a, 0-b, and 0-c) for training/pre-intervention, so the students become more familiar with cooperative learning atmosphere.

4.5.1 The scaffolding worksheets

The scaffolding questions on the worksheet this study were exactly the same as those in Study 1. However, there were three new worksheets constructed for the training phase (see appendix C).

4.5.2 The reading comprehension test

Similar to study 1, the tests were originally designed for the HAVO exams. The test consisted of a reading passage with about 10 multiple choice questions. If

there were fewer than 10 questions, the researcher added a few to keep the numbers of questions similar per text. The multiple choice tests were administered after the students had worked cooperatively or individually. The multiple choice test was done by each student individually which is aimed at measuring the students' ability to find main ideas, support ideas, make inferences and make connections between ideas (see sub-chapter 3.5.2 for examples of the test).

4.5.3 The vocabulary test

The same as in study 1, 20 items vocabulary test is included in the current study as part of the pretest and posttest. The test for pretest is the same as in the posttest. The vocabulary items were selected from the three texts used in the intervention.

4.6 Validity and reliability of the tests

The tests were found to be reliable.Study 1 had cooeficient alpha = .70 (n=75). In the current study (n=83) the reading comprehension items had coefficient alpha =.77. Items for the vocabulary test in Study 1 (n=75) had a recorded alpha=.73, but for the current study alpha=.64 for pretest and posttest. 2 of 20 vocabulary items were excluded from the pretest (items 5 and 16) and 1 item of the posttest (item 16) because of the negative of corrected item-total correlation.

4.7 Procedures

The following procedure was followed in this study:

4.7.1 Selection of intervention groups

In this study, 89 students of 3 classes were assigned at random. Two of them were experimental groups (SCL and SIL), and the other one was a control group (IL). The two experimental groups consisted of 29 and 26 students and the control one consisted of 34 students. However, only 28 students of the control class attended and took part in the whole class meetings. 3 out of 6 students did not take the pretest and the other 3 missed the other class sessions.

The SCL group was divided into 7 small groups (1 group of five and 6 groups of four students). Each of the group consisted of heterogeneous students' levels which ranged from low to average to high proficiency and the groups were mixed-gender. The level was determined based on the results of the pretest. To ensure each of the groups consisted of heterogeneous abilities we use stratified random sampling by randomly putting 1 of 7 students of the highest, average, and lowest scores in each of groups.

4.7.2 Pretest

As in Study 1, a reading comprehension (40 minutes) and vocabulary test (20 minutes) was administered to the 3 groups and the results were recorded.

4.7.3 Training (pre-intervention)

The study started at the end of September 2011 and ended in January 2012. In the first six weeks of the intervention, the two experimental groups were trained to use scaffolding questions and in the SCL group the students were trained to work together. Basically the groups received the same treatment as in the actual experiment, but the teacher would intervene more when she noticed that students had problems working on their own and managing their time.

For example in the cooperative learning condition, during the training the basic principles of cooperative learning were explained. At the beginning of every class meeting, the five essential elements of cooperative learning were written on the white board, so the students were aware of them. During the training, the researcher observed and made notes on the process of cooperative learning and gave the students feedback on the process itself. The SIL group and IL group received the same texts as the SCL group during the training sessions. The teacher spent more time on going through the worksheet with the SIL group and the SCL group, as each part was done more explicitly with teacher. The IL group read the passage without scaffolding. During the lessons the teacher asked the students to list the difficult words and to find their meaning. They also suggested generating their own questions to understand the text given. The text, the time allocation, and the teacher were also the same as in the other two groups. The training has been conducted for 6 week periods. 100 minutes per meeting per week was allocated to all groups.

The sequence of activities in the session was basically the same as in Study 1, except that more time was allowed for the different activities. First the SCL and SIL students read the text silently for a few minutes and then were given a worksheet consisting of scaffolding questions that helped and guided them to get a better understanding of the text. In the SCL condition students worked together in groups of 4 on the worksheet. In the SIL condition students worked individually on the worksheet. The IL group read the texts without scaffolding questions.

In all three conditions the texts, the time allocation, and the teacher were the same. For each text 2 times 50 minutes were allowed. If students were not able to finish answering the questions on the worksheet within one session, they could finish it in the next session. Then 20 to 30 minutes were allocated to accomplish answering the questions. Then they had 30 minutes to check whether their answers were correct or not by comparing them with the key answers provided by the researcher. Just as in the real experiment, the students completed a multiple choice comprehension test related to the text they had already read and discussed in their groups. After the pre-intervention training of six weeks, the researcher felt confident that the students really comprehended the principles and procedures of their own condition and the real experimental study was conducted.

4.7.4 The intervention

As in Study 1, each group learned according to its method and time schedule for 6 weeks. The SCL group was divided into 7 small groups. Each of the groups consisted of students with different abilities (as determined by the pretest), so a heterogeneous level of performance existed.

The SCL and SIL groups received the text to be read silently first. Then they were given worksheets with scaffolding questions. The SCL group answered the questions cooperatively and the SIL members individually. The IL group were not given questions but were encouraged to look up words they did not know and ask questions if there were passages that were not clearly understood. When dealing with the self-generated questions, the teacher included the whole class. The pre-intervention training and intervention study took 12 weeks in total.

Table 4-2. Activities and procedures in SCL, SIL, and IL groups

Time	Action	Experimental groups		Control group
		Cooperative	**Individual**	**Individual**
15’	Pre-reading	Welcome Brief outline of objectives and procedures	Welcome Brief outline of objectives and procedures	Welcome Brief outline of objectives and procedures
50’-100’	Whilst-reading activities	Group work on worksheets Compare answers with answer key	Individuals work on worksheets Compare answers with answer key	Individuals read text with help of dictionary, Generate questions and question to the teacher
40’	Post-reading	RC test	RC test	RC test

4.7.5 Posttest

One week after the six class periods of treatment, a posttest to measure transfer of skills was administered. The posttest was the same as in Study 1. It included the text entitled “Why phones are replacing cars” and a 10 multiple-choice items. Forty minutes were allocated to complete the test.

After the reading comprehension test, the vocabulary test was administered. As in Study 1 the pretest and posttests were identical.

4.8 Data Analysis

To examine differences in reading comprehension gain, a one-way between groups analysis of variance (ANOVA) was used. Reading comprehension gain was the dependent variable. The gain scores are calculated by posttest minus pretest scores. The independent variable was group with three levels (SCL, SIL, and IL).

To investigate the immediate effect of 4 intervention times on the development of RC scores, a mixed between-within subjects analysis of variance (ANCOVA) was used. SCL, SIL, and IL groups (independent variable) were subjected as the between-subjects variable, and the reading comprehension scores (4 times test) as within-subject variables. The pretest score was used as covariate variable. Three times test scores during the intervention and one time posttest after intervention (time 2, 3, and 4) were used as dependent variables. The independent variable was group with three levels (SCL, SIL, and IL). This design was used to examine main effects of intervention time and group on the improvement of reading scores across 4 periods of time in each group.

To examine treatment effects on students of different abilities, a two-way ANOVA was used. In this design, group (SCL, SIL, and IL) and reading comprehension level (low and high ability) were used as the independent variables. The dependent variables were reading comprehension and vocabulary gain.

To examine the difference in the development of vocabulary scores between SCL, SIL, and IL groups, a one-way ANCOVA was used. Pretest scores were used as covariate and posttest scores as the dependent variable.

4.9 Result

After presenting the results of the SCL, SIL, and IL treatments on reading comprehension, I will compare gains of the highest and lowest students. Then, I provide the results of the reading comprehension scores of treatment tests and the posttest over time (14 weeks). Eventually, I will present the treatment effects on vocabulary gain.

4.9.1 Transfer effects reading comprehension

A descriptive analysis was conducted to show mean differences in reading comprehension gain among the three groups. The results are summarized in Table 4-3.

Table 4-3.Descriptive statistics SCL, SIL, and IL groups

	Group	N	Mean	SD	Minimum	Maximum
Pretest	SCL	29	4.28	1.56	1.00	7.00
	SIL	26	4.15	1.43	2.00	7.00
	IL	28	4.86	1.43	1.00	7.00
	Total	83	4.43	1.49	1.00	7.00
Posttest	SCL	29	6.20	1.86	2.00	9.00
	SIL	26	6.50	1.50	2.00	10.00
	IL	28	5.79	1.99	2.00	10.00
	Total	83	6.16	1.80	2.00	10.00
Gain	SCL	29	1.93	2.22	-3.00	7.00
	SIL	26	2.35	1.44	-1.00	5.00
	IL	28	1.00	2.00	-2.00	6.00
	Total	83	1.75	1.99	-3.00	7.00

The descriptive data in table 4-3 shows differences in scores of reading comprehension means and gain (posttest minus pretest) among the three groups. A preliminary analysis using Levene's test revealed that the assumption of homogeneity of variance of the three groups was not violated as indicated by $F(2, 80) = .879$, $p > .05$. Therefore, a one-way between groups ANOVA was performed to examine the difference scores of SCL, SIL, and IL groups with assumed homogeneity of variance.

The test revealed a statistically significant difference in reading comprehension at $p < .05$ for the SCL, SIL, and IL groups: $F(2, 80) = 3.485$, $p < 0.05$. The effect size calculated using eta squared was .10. This effect size was found to exceed Cohen's (1988) criterion for a medium effect. Therefore, post-hoc comparison using Bonferroni test was conducted with assuming homogeneity variance. The test found a significant difference in reading comprehension gain between the SIL group ($M=2.35$, $SD=1.44$), $p < .05$ and IL group ($M=1.00$, $SD=2$), $p < .05$ but no significant difference was found with (SCL) group ($M=1.93$, $SD=2.22$), $p > .05$. In addition, there was no significant difference between the SCL and the IL group. Figure 4-1 demonstrates the differences.

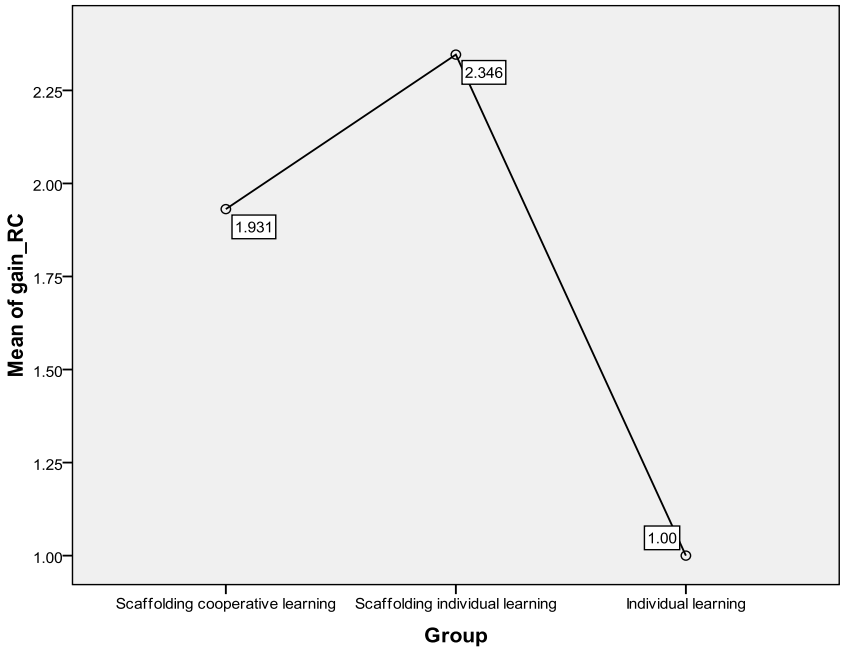

Figure 4-1. Mean plot of reading comprehension gain

4.9.2 Immediate and transfer effects overtime

To examine in more detail the immediate and transfer effects of scaffolding in the two conditions (SCL and SIL), a mixed-between within subjects ANCOVA design was applied. This test can be used to examine the differences between subject in groups by focusing on inspecting main effects and interaction of the intervention time and groups.

The groups (SCL, SIL and IL) were used as independent variables (fixed factors), the pretest score was used as a covariate variable and the four remaining scores (3 tests directly after treatment and the posttest) were used as the dependent. The descriptive statistics of the SCL, SIL, and IL groups are summarized in Table 4-4.

Table 4-4.Descriptive statistics for mean scores of SCL, SIL, and IL groups

Time	Group	Mean	SD	Mean Adjusted	Std. Error	N
1	SCL	4.76	1.92	4.82[a]	.23	29
	SIL	4.58	1.53	4.68[a]	.31	26
	IL	4.21	1.52	4.06[a]	.31	28
	Total	4.52	1.67	4.52[a]	.18	83
2	SCL	5.31	1.77	5.34[a]	.31	29
	SIL	4.35	1.72	4.40[a]	.33	26
	IL	4.93	1.54	4.85[a]	.32	28
	Total	4.88	1.71	4.86[a]	.18	83
3	SCL	4.79	1.21	4.82[a]	.25	29
	SIL	5.12	1.82	5.16[a]	.26	26
	IL	5.25	.84	5.18[a]	.25	28
	Total	5.05	1.33	5.05[a]	.15	83
4	SCL	6.21	1.86	6.28[a]	.32	29
	SIL	6.50	1.50	6.62[a]	.33	26
	IL	5.79	1.99	5.60[a]	.33	28
	Total	6.16	1.80	6.17[a]	.19	83

As preliminary analysis, a Mauchly's test, found that the assumption of sphericity was not violated, W=889, χ^2 (9) =8.879, p>.05; therefore a mixed between-within subjects ANCOVA was conducted with sphericity assumed to examine the effect of four different intervention times on reading comprehension gain of SCL, SIL, and IL groups. After adjusting for pretest scores of reading comprehension, the test found no significant interaction between groups, intervention times, and pre-intervention scores (covariate), Wilks' Lambda=.905, F(6, 152)= 1.279, p>.05, partial eta squared=.049. There was no significance interaction between intervention time and pre-intervention score, Wilks' Lambda=.942, F(3, 75)= 1.528, p>.05, partial eta squared=.058. There was no significance interaction between intervention time and groups, Wilks' Lambda=.862, F(6, 150)= 1.922, p>.05, partial eta squared=.071. The

main effect of groups was not significant, $F(2, 79)=1.105$, $p>.05$, partial eta squared .03 (small effect).

There was a substantial main effect of intervention times on increasing reading comprehension scores, Wilks' Lambda=.520, $F(4, 69)= 23.11$, $p<.001$, partial eta squared=.48 (very large effect). The covariate, reading comprehension scores pre-intervention, was significantly related to the increase of reading comprehension scores, $F(1, 79)=13.121$, $p=.001$, partial eta squared=.142 (large effect).

Furthermore, a Post-hoc test using Bonferroni correction was performed to examine which intervention time provided the most effect to the development of reading comprehension scores. The test revealed that there was a significant difference in reading comprehension scores between post-intervention (time 4) and intervention 1 (MD=1.65), $p<.001$, posttest and intervention 2 (MD=1.30), $p<.001$, posttest and intervention 3 (MD=1.11), $p<.001$. However, there was no significant difference between intervention 1 and intervention 2 (MD=.34), $p>.05$, intervention 3 (MD=.54), $p>.05$ (see figure 4.2). These results suggest that for each of the groups intervention was found to be effective in increasing reading comprehension scores after 3 times (14 weeks) of intervention, but that there is no direct effect during the three times of intervention.

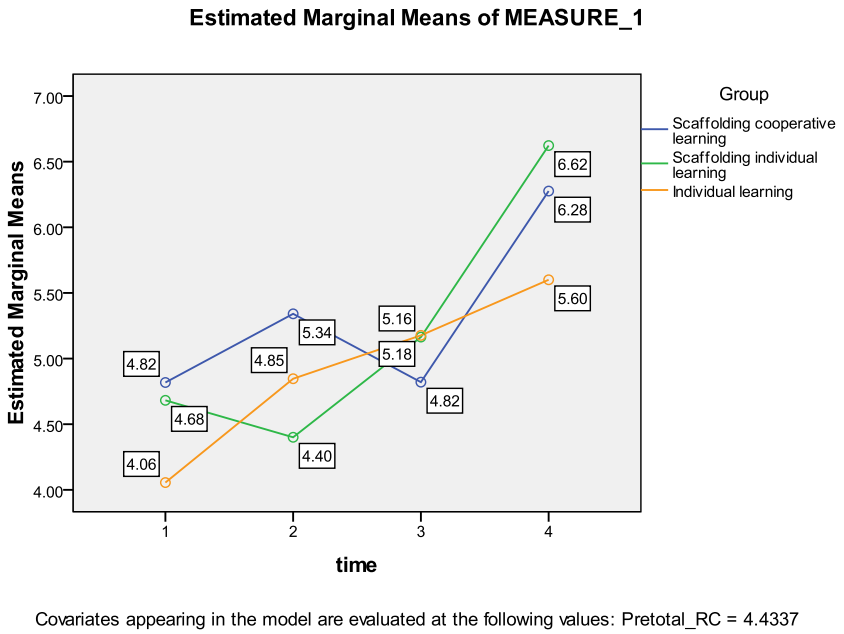

Figure 4-2. The improvement of RC scores over 4 periods of time

4.9.3 Differential effect of scaffolding on the RC gain

One of the research questions was whether there is any difference in reading comprehension gain between the lower and the higher ability students in their respective SCL, SIL, and IL groups. Specifically, the question was whether low level students benefit more from the treatment than high level students. To answer this question a two-way ANOVA was conducted to examine mean differences between the SCL, SIL, and IL groups with two levels of reading comprehension ability: lower and higher ability.

To determine the two levels of reading comprehension ability, I used the principle of median split of the pretest scores as a cut-off point to divide the students into two groups. The lower group had scores of below the median (mdn=4) and the higher group had scores above the median. This principle has been employed by many researchers in partitioning samples (i.e. Nassaji, 2003; Yea-ru Tsai et al, 2010).

The results of the descriptive analysis for reading comprehension gain for the students with two levels of RC ability of the two experimental groups (SCL and SIL) and one control group (IL) are summarized in Table 4-5.

Table 4-5. Descriptive statistics of RC levels and mean gain

Group	RC levels	Mean	Std. Deviation	N
SCL	Lower	3.00	1.81	15
	Higher	.79	2.08	14
	Total	1.93	2.22	29
SIL	Lower	2.81	1.42	16
	Higher	1.60	1.17	10
	Total	2.35	1.44	26
IL	Lower	1.33	1.83	12
	Higher	.75	2.14	16
	Total	1.00	2.00	28
Total	Lower	2.47	1.79	43
	Higher	.98	1.91	40
	Total	1.75	1.99	83

The preliminary analysis by Levene's test revealed that the assumption of homogeneity of variance of the three groups was not violated as indicated by $F(5, 77)=1.033$, $p > .05$. Therefore, a two-way between groups ANOVA was performed with assuming homogeneity of variance to examine the effect of scaffolding (SCL and SIL groups) and no scaffolding (control group) in reading comprehension gain of the lower and the higher level of ability students of SCL, SIL, and IL groups.

The test revealed that the interaction effect between groups and level of RC ability was not significant statistically, $F(2,77)=1.466$, $p>.05$, partial eta squared= .037. There was a statistically significant main effect for groups, $F(2,7)=3.981$, $p<.05$, partial eta squared=.094 (medium effect).Post-hoc comparisons using the Bonferroni test indicated that mean scores of the SIL group differed statistically with the IL group (MD=1.35), $p<.05$, but not with

the SCL group (MD=.42), p>.05. There was no significant difference between the SCL and IL groups (MD=.93), p>.05.

The main effect for level of RC ability was also significant statistically, F(1, 77)= 11.458, p<.05, partial eta squared=.13 (large effect). The Bonferroni pairwise comparisons test at p-value <.05 revealed that mean scores of the low RC ability group statistically differed from the high group (MD=1.34), p=.001. This suggests that in addition to the effect of scaffolding, the students' ability in reading comprehension before the intervention had a strong effect on reading comprehension gain.

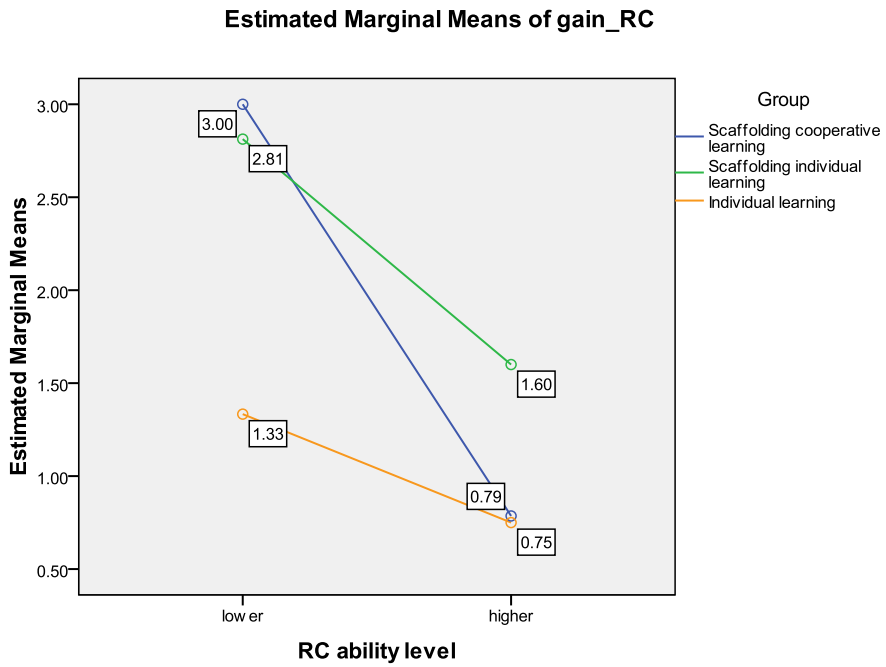

Figure 4-3. Mean gain of the low- high levels of RC in SCL, SIL, and IL groups

I will now examine in more detail whether the difference in gain in the low and the high groups was statistically significant within each group (SCL, SIL, and IL).

For the SCL group, a preliminary analysis using Levene's test revealed that the assumption of homogeneity of variance of the low and the high groups was not violated as indicated by F(1, 27)= .767, p>.05. Therefore, a one-way

between groups ANOVA was performed with assumed homogeneity of variance to examine the effect of scaffolding in reading comprehension gain. In this test, the score of reading comprehension gain was used as the dependent variable and RC ability with two levels (low and high ability) as the independent variable (factor).

The one-way ANOVA test found a statistically significant difference in reading comprehension gain between the two groups, $F(1, 27) = 9.366$, $p < .01$. Therefore, a Contrast test ($p < .05$) with assumed homogeneity of variance was performed to examine which group achieved more gain. There was a significant difference in reading comprehension gain for the low ability ($M = 3, SD = 1.81$) and the high ability ($M = .79$, $SD = 2.08$); $t(27) = 3.060$, $p < .01$ (two-tailed), $MD = 2.21$, eta squared = .26. This indicates that the low ability students obtained more gain in reading comprehension than the high ability students in the SCL group (see figure 4-4).

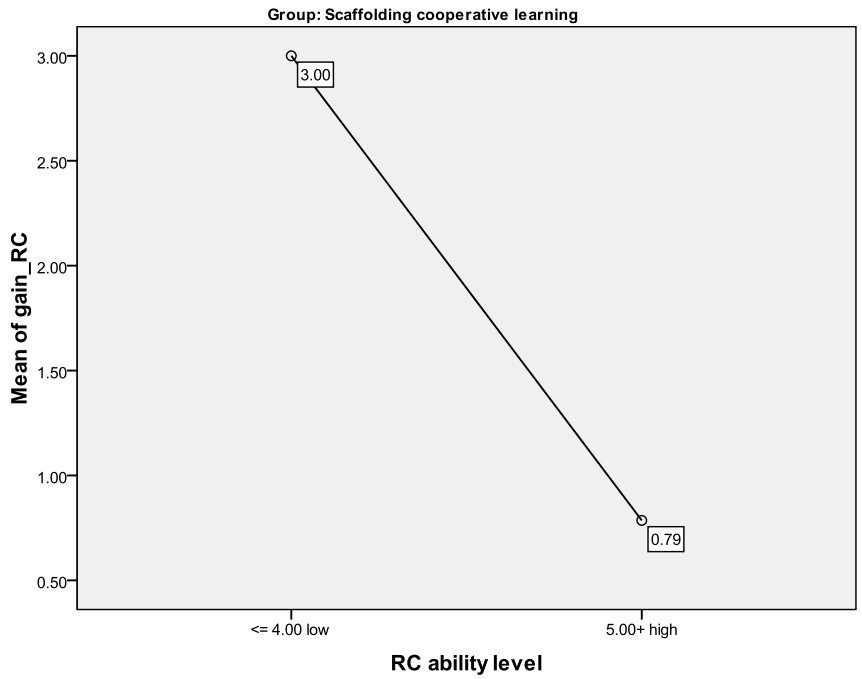

Figure 4-4. Mean gain of the low and the high ability levels of RC in SCL group

For the SIL group, the same statistical analyses were conducted as for the SCL group. A preliminary analysis using Levene's test revealed that the assumption of homogeneity of variance of the three groups was not violated as indicated by F (1, 24) = .002, p>.05. Therefore, a one-way between groups ANOVA was conducted. The result revealed there was a significant difference in reading comprehension gain between the low and the high ability students of the SIL group, F (1, 24) =5.069, p<.05. Therefore, a Contrast test (p<.05) with assumed homogeneity of variance was performed to examine which group achieved better gain. There was a significant difference in reading comprehension gain for the low ability (M=2.81, SD=1.42) and the high ability (M=1.6, SD=1.17); t(24)=2.251, p<.05 (two-tailed), MD= 1.21, eta squared=.17. This indicates that the low ability group obtained more gain in reading comprehension than the high ability SIL group (see figure 4-5).

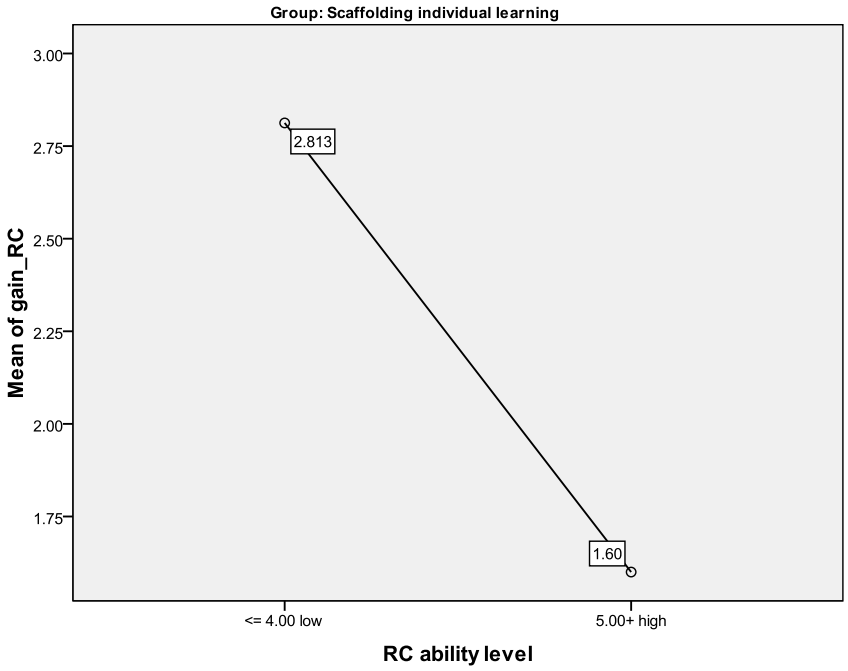

Figure 4-5. Mean gain of the low and the high ability levels of RC in SIL group

For the IL group the same analyses were used again. The preliminary analysis using Levene's test was performed. The test revealed that the assumption of homogeneity of variance of the three groups was not violated as indicated by F (1, 26) = .360, p>.05. Therefore, a One-way between groups ANOVA was performed with assumed homogeneity of variance. The test revealed no statistical difference in reading comprehension gain between the low ability (M=1.33, SD=1.82) and the high ability students (M=.75, SD=2.14), F (1, 26) =.574, p>.05, MD=.58,eta squared=.02 (small effect).This suggests that the likelihood for the low and the high ability students to obtain similar gains was high.

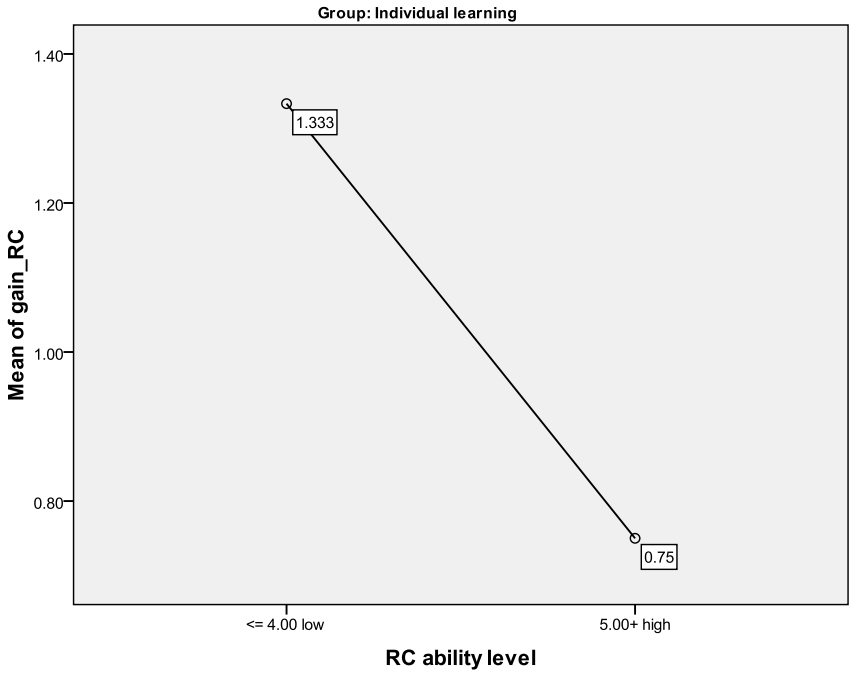

Figure 4-6. Mean gain of the low and the high ability levels of RC in IL group

To summarize, in both the SCL and SIL groups, the low level students gained significantly more than their high ability counterparts. In the IL condition there were no differences between the low and high students. These suggest that the low level students of SCL and SIL benefit more from the treatment than the high level students.

4.9.4 Differential effect of scaffolding on vocabulary gain

One of the research questions was whether low level students benefit more from the treatment than high level students. To answer this question a two-way ANOVA was conducted to examine mean differences between SCL, SIL, and IL groups with two levels of reading comprehension ability: low and high ability of students. Just like the analysis for RC gain, two levels of ability were determined by median split as a cut-off point to divide the students into 2 groups based on the pretest of reading comprehension scores.

The descriptive analysis for vocabularygain for the two experimental groups (SCL and SIL) and one control group (IL) are summarized in table 4-6.

Table 4-6. Descriptive statistic of vocabulary gain for SCL, SIL, and IL groups

Group	RC levels	Mean	Std. Deviation	N
SCL	Low	1.40	4.75	15
	High	.78	3.14	14
	Total	1.10	3.99	29
SIL	Low	.50	2.92	16
	High	1.60	2.76	10
	Total	.92	2.86	26
IL	Low	2.83	3.54	12
	High	4.25	4.31	16
	Total	3.64	3.99	28
Total	Low	1.47	3.84	43
	High	2.38	3.83	40
	Total	1.90	3.84	83

Furthermore, a preliminary analysis by Levene's test revealed that the assumption of homogeneity of variance of the three groups was not violated as indicated by $F(5, 77)= 1.507$, $p > .05$. Therefore, a two-way between groups ANOVA was performed with assumed homogeneity of variance to examine the effect of treatment on vocabulary gain in the low and high ability level students of SCL, SIL, and IL groups.

The test revealed that the interaction effect between groups and level of RC ability was not statistically significant, $F(2,77)=.611$, $p>.05$, partial eta

squared= .016 (small effect). There was a statistically significance main effect for groups, F(2,77)=4.672, p<.05, partial eta squared=.108 (medium effect). Post-hoc comparisons with the Bonferroni test indicated that mean scores of SCL and IL group differed statistically with the IL group (MD=-2.54), p<.05, that the SIL group differed statistically with the IL group (MD=2.71), p<.05, and that there was no significant difference between the SCL and SIL groups (MD=.18), p>.05.The main effect for level of RC ability was not significant statistically, F(1, 77)= .521, p>.05, partial eta squared=.007 (small effect). This suggests that scaffolding and students' ability provide no effect on vocabulary gain.

4.9.5 Vocabulary retention

The descriptive of the pre- and post- vocabulary test are summarized in table 4.7.

Table 4-7.Descriptive statistics of vocabulary scores of SCL, SIL, and IL groups

		N	Mean	SD	Minimum	Maximum
Pretest	SCL	29	9.52	3.11	4.00	17.00
	SIL	26	9.92	2.51	4.00	17.00
	IL	28	7.39	2.47	2.00	12.00
	Total	83	8.93	2.91	2.00	17.00
Postest	SCL	29	10.62	3.29	4.00	16.00
	SIL	26	10.85	2.22	6.00	15.00
	IL	28	11.04	3.27	6.00	17.00
	Total	83	10.83	2.96	4.00	17.00
Gain	SCL	29	1.10	3.99	-8.00	9.00
	SIL	26	.92	2.86	-5.00	6.00
	IL	28	3.64	3.99	-4.00	12.00
	Total	83	1.90	3.84	-8.00	12.00

A one-way between groups analysis of covariance (ANCOVA) was performed to compare the vocabulary scores of the SCL, SIL, and IL groups as an effect of three different treatments. The independent variable was group with

three levels (SCL, SIL, and IL), and the dependent variable was posttest scores of vocabulary. The pretest scores were used as covariate in this analysis.

A preliminary test using Levene's test showed that the assumption of homogeneity of variance of the three groups was violated as indicated by $F(2, 80) = 3.808$, $p<.05$. Therefore, a one-way between groups ANCOVA was performed without assuming homogeneity of variance. After adjusting for the pretest scores of vocabulary, the test found there was no significant difference between the SCL, SIL, and IL groups, $F(2, 79)=.535$, $p>.05$, partial eta squared=.013. There was no relationship between the covariate, pretest in vocabulary, and posttest, $F(1,79)=1.704$, $p>.05$, partial eta squared= .021. The results indicated that only 1.3% of variance of vocabulary scores was explained by groups, and 2.1% of variance of vocabulary gain was explained by the presence of covariate variable (pretest).

4.9.6 Summary

To summarize, the current study found that scaffolding provides a significant effect on reading comprehension gain in the SCL and SIL condition. The strongest effect of scaffolding in reading comprehension gain can be found in the SIL condition. In other words, scaffolding for reading comprehension is most effective in the individual learning condition.

Along with scaffolding, the students' initial level of ability in reading comprehension has a substantial effect on reading comprehension gain. In the SCL and SIL groups, the low ability students gained more than the high ability students. This suggests that scaffolding, either in a cooperative or individual learning condition, is especially effective in improving reading comprehension in low ability students.

For immediate effects of treatment on reading comprehension there were no differences among the SCL, SIL, and IL conditions. Only the transfer effect in the SIL condition was significantly greater. Finally, there was no significant effect of treatment on vocabulary gain.

Chapter 5

Study 3

Relationship between attitudinal factors, reading comprehension, and vocabulary gain

5.1 Introduction

In Study 2 it appeared that students in the cooperative learning condition did not improve more in reading comprehension than students in the individual condition. However, it appeared that in all conditions the low ability students gained significantly more than their high level peers. In the current study I will examine the cooperative group further to see if the type of group interaction has a positive effect on reading comprehension gains. The general thought is that if students feel good about their group work and contribute more for their group work they may perform better. This study is therefore a follow up of Study 2, zooming in on the students in the cooperative condition, and examining the relationship between attitudinal factors, reading comprehension and vocabulary gain. Included in the attitudinal factors are general attitude towards group work (ATGW), individual accountability, and group processing.

Attitudinal factors in the current study were operationalized from theories and related studies on attitude (Lambert & Lambert, 1973; Ghaith & Bouzeineddine, 2003; Hogg & Vaughan, 2005; Banaji & Heiphetz, 2010), cooperative learning (Slavin, 1982, 1991; Johnson, Johnson, and Holubec, 1998; Johnson, Johnson, and Smith, 1998; Gillies & Ashman, 2003; Veenman et al., 2005; Gillies, 2007;), and group dynamics (McGrath, Arrow, and Berdahl, 2000; Forsyth, 2014) as discussed in the literature review. Therefore, I discern behavior, affective, and cognitive responses of students in cooperative learning as prior components of the ATGW factor.

The manifestation of these factors is indicated by what students did in the group work, how they reacted to each other, how they felt during the process, how they responded to what they have done in group work, and what they

thought about the situation. In the other words, components of ATGW consisted of students' behavior, affective, and cognitive responses. These components were closely inter-connected in a complex system. For example, overt behavior did not always represent students' attitude. This is because of the dynamics of the groups and the individual interaction within the group, which is characterized by the nonlinear causal relationships, the uniqueness, and the complexity of the relationship (Forsyth, 2014), where individuals can be influenced by groups and the other way around (Shaw, 1981). Therefore, individual accountability and group processing were also included in this study in relation to reading comprehension and vocabulary gain.

As suggested in Study 2, ATGW, individual accountability and group processing need to be considered as one of many important variables in relation to the learning process and gain. Also, some empirical studies on the particular context of EFL show that attitude has been found to be an essential component of second/foreign language learning pedagogy that is related to students' achievement (Haque, 1989; Ghaith & Bouzeineddine, 2003; Alharbi, 2008; Khan, 2011; Suhendan & Aksu, 2014; Bastug, 2014). Therefore, I believe that the students' attitude in group, individual accountability, and group processing may be related to learning gain. Therefore, in the current research I was interested to examine whether attitudinal factors had a relationship with reading comprehension and vocabulary gain.

The following sections will present the research questions, design, results, discussion and conclusion, pedagogical implications, limitations of this research and suggestions for further research.

5.2 Research Questions

In this study, the following questions will be addressed:

1. Is there any relationship between ATGW and reading comprehension and vocabulary gain?
2. Is there any relationship between individual accountability, group processing, and reading comprehension gain? Which is the best predictor: individual accountability (individual contribution for group) or group processing within group?

3. Is there any relationship between individual accountability, group processing and vocabulary gain? Which is the best predictor of vocabulary gain: individual accountability (individual contribution for group) or group processing (cohesion) within group?

5.3 Design

A relationship between variables design was applied in this study. In this design, scores of the reading comprehension and vocabulary gain (posttest minus pretest scores) were used as dependent variables. Both scores of attitude towards group work (ATGW), obtained after the participants had completed the interventions, and the posttest were used as the independent variables.

In addition, a multiple regression analysis was performed to examine the relationship between attitude variables and reading comprehension and vocabulary gain. In this analysis I used scores of reading comprehension and vocabulary gain as dependent variables and scores of individual accountability and group processing as predictors.

5.4 Participants

In this study, 29 students of the "Reading II" course in the academic year of 2011/2012 were the participants. They are the Scaffolding cooperative learning (SCL) students from Study 2.

5.5 The questionnaire

The questionnaire was administered to the students after conducting the posttest in Study 2. The questionnaire was adapted from Gillies (2007) and consisted of 42 items. The questionnaire was aimed to measure students' responses in ATGW, individual accountability and group processing. The questionnaire is presented in appendix D.

5.6 Data Analysis

The data collected from the questionnaire was classified, tabulated, and analyzed statistically. After conducting an item analysis to check reliability and inter-item correlation I found individual accountability and the group processing to be the main data for analysis. Reliability and correlation inter-item were determined based on Cronbach Alpha scores above 0.50 and mean inter-item correlation above 0.20.

To measure relationship between ATGW, reading comprehension and vocabulary Pearson's correlation analysis was conducted. Furthermore, the regression analysis was performed to measure individual contribution to groups (individual accountability) and group processing in relation to reading comprehension and vocabulary gain.

5.7 Result

This session presents the results of the item analysis of the questionnaire, the Pearson's correlation analysis to examine the relationship between ATGW scores and reading comprehension gain, and the regression analysis for examining the effect of individual accountability and group processing on reading comprehension gain. Then, using the same analyses, the results for vocabulary gain are given.

5.7.1 Item analysis questionnaire

The questionnaire was divided into two main sections. The first section consisted of 9 items and concerned general information about the students' background. The second section consisted of 5 measurement scales, namely factor A, B, C, D, and E.

Factor A consisted of items Q10 to Q18, and Q28. These questions were addressed to collect students' response of their satisfaction in group work (affective factor). Based on the results of the item analysis, items Q10 and Q15 were excluded because their corrected item total correlation was negative or very close to zero. (Coefficient alpha= .67, mean inter-item correlation= .24.). These items measure students' satisfaction in group work (affective factor=A),

Factor B consisted of items Q19 to Q22, which addressed information about how the students helped each other in group work. No items were excluded. Coefficient alpha= .78, mean inter item correlation=.47. These items measured students' behavior in group work (behavior factor=B),

Factor C consisted of items Q23 to Q27. No items were excluded. Alpha= .60, mean inter-item correlation=.26. Then, coefficient alpha for the ABC factor =.60, inter-item correlation=.38. These items measured students' opinion or thinking about what they did in group work (cognitive factor=C).

Factor D consisted of items Q29 to Q37. Items Q31, Q32, and Q34 were excluded because of a negative corrected item total correlation. Alpha= .73, mean inter-item correlation= .31. Items Q39 and Q41 were reversed because the wrong direction of the students responses. Then, Q38 and Q39 were excluded for low corrected item-total correlation. Coefficient alpha=.61, mean inter-item correlation= .34. These questions collected students' responses related to their reflection and thinking about their groups (group processing). These responses indicated cohesion in each group wherein each member of the group helps one other in the group work. Therefore, students' responses represent the strength or the weakness of teamwork in groups.

Factor E consisted of items Q38 to Q42 and dealt with the students' opinion about the roles assigned in the group discussion that indicated their satisfaction with their roles in the group work. Coefficient alpha=.51, mean inter-item correlation= .20. These items measured satisfaction in roles in the groups.

To inspect the correlation between factors A to E, a correlation analysis was conducted. The test found that factor A had a strong relationship with factor B, Pearson's $r(29) = .395$, $p<.05$) and C, $r(29) = .401$, $p<.05$). There was no significant correlation with factor D, $r(29)=.123$, $p>.05$ and E, $r(29)=-.147$, $p>.05$. These indicated that factors A, B, and C formed one coherent factor related to ATGW. Because factors D and E have no correlation with A, B, C, and E and lack content validity related to attitudinal factors, these items were excluded from the analysis. Therefore, I calculated the sum of the A, B, and C factors as one variable of ATGW. The resulting ATGW scale consisted of 17 items number Q11 to Q14, and Q16 to Q28 with a Cronbach alpha=.79 for the 17 items.

5.7.2 ATGW, RC, and vocabulary gain

The research question for this analysis is: Is there any relationship between ATGW scores and reading comprehension and vocabulary gain? To address this question, Pearson's correlation analysis was performed to examine the relationships between ATGW scores and gain scores of reading comprehension and vocabulary knowledge. Preliminary analyses were conducted to ensure no violation of assumption in normality and linearity. The result was summarized in the following table.

Table 5-1. Pearson correlation between ATGW, RC and vocabulary gain

	1	2	3
Attitude towards group work	1	.509**	.056
Reading comprehension gain		1	.182
Vocabulary gain			1

**. Correlation is significant at the 0.01 level (2-tailed); n=29

The results revealed a strong positive correlation between the attitude and reading comprehension gain, $r(29)=.51$, $p<.01$, This indicates that attitude contributes for 26% to the variance in the participants' scores in reading comprehension gain.

There was no significant correlation between attitude and vocabulary gain, $r(29)=.06$, $p>.05$. This indicates that ATGW factors contribute only for 0.4% to variance of vocabulary gain scores. To summarize, the results suggest that attitude has a strong relationship with reading comprehension gain, but not with vocabulary gain.

5.7.3 Individual accountability, group processing, and RC gain

This section will report the results of the regression analysis to examine the effects of individual accountability and group processing on reading comprehension and vocabulary gain. Is there a relationship between individual accountability, group processing, and reading comprehension gain and what is the best predictor? A multiple regression analysis was performed to predict reading comprehension gain from individual accountability and group processing as predictor variables.

The predictors of individual accountability consist of independent variables subscales: Q12 (understand exactly what to do), Q13 (frequency of talking), Q15 (get on with everyone), Q16 (help each other), Q19 (try to recognize ideas from others), Q20 (listen to one another), Q21 (help others in sharing ideas), and Q27 (take turn in talking and listening). These items had an acceptable reliability (Cronbach alpha=.70) and inter-item correlation= .20.

The predictors of group processing included subscales Q18 (group share), Q29 (each member gives time to talk and make suggestions), Q30 (group members treat each other nicely), Q33 (group members offer help when needed), Q34 (group members seek help from others), Q35 (group members feel free to talk and suggest), Q36 (decision made by group), and Q37 (group members do the best they can). These items had an acceptable reliability (Cronbach alpha=.71) and inter-item correlation= .21.

A preliminary analysis was conducted to ensure no violation of assumption of normality, linearity, multi-collinearity, and homoscedasticity. The regression analysis revealed that the model for individual accountability was statistically significant, F (8, 20)=5.021, p<.05, and accounted for 53.5% of the variance of reading comprehension gain. Within accountability, the variables "try to recognize ideas from others" and "listen to one another in group work" were statistically significant as the best predictors of reading comprehension gain. The other predictors, "understand exactly what to do", "frequency of talking", "get on with everyone", "help each other", "help other in sharing ideas", and "take turn in talking and listening" were not statistically significant (table 5-2).

Table 5-2. Regression analysis of individual accountability in group work

Model 1	Unstandardized		Standardized	T	Sig.
	B	Std. Error	Beta		
(Constant)	-8.30	6.11		-1.36	.19
Understand exactly what to do	-.01	.74	-.00	-.02	.99
Frequency of talking	.15	.73	.03	.20	.84
Get on with everyone	.09	.61	.02	.14	.89
Help each other	.35	.44	.15	.79	.44
Try to recognize other ideas	2.30	.78	.66	3.84	.00**
Listen to other ideas	1.76	.57	.68	3.06	.01*
Help other share ideas	-.18	.69	-.07	-.27	.79
Take turn in talking and listening	.19	.67	.07	.28	.78

Note. F (8, 20) = 5.021, p < .05, Adjusted R Square=.535; **= p<.001; *=p<.05

The variable "try to recognize other ideas" was associated with increasing reading comprehension gain (Beta=.662, p<.001). The test found that the more individuals tried to recognize ideas of others, the more they improved in reading comprehension. Then, inspecting the other predictor, the more individuals in the group listen to other, the more they achieve in reading comprehension (Beta= .676, p<.05). This suggests that there is a strong relationship between individual accountability and reading comprehension.

Furthermore, another regression analysis was conducted for group processing as an independent variable in predicting reading comprehension.

Table 5-3. Regression analysis of group processing in CL groups

Model 2	Unstandardized Coefficients		Standardized Coefficients	T	Sig.
	B	SE	Beta		
(Constant)	4.84	5.15		.94	.36
Group share the work	-.21	.67	-.07	-.31	.76
Give time to talk and suggest	-.25	.61	-.09	-.40	.69
Group treat nicely	-.93	.71	-.34	-1.32	.20
Others ideas are important	-.09	1.03	-.02	-.09	.93
Use ideas from others	-.77	.879	-.17	-.87	.39
Group offers help	1.20	1.24	.25	.97	.35
Seek help each other	-2.56	1.11	-.58	-2.31	.03*
Members feel free to talk	3.13	1.32	.58	2.38	.03*
Decision made by group	.354	1.19	.08	.30	.77
Members do the best	-.17	1.11	-.03	-.15	.88

Note. F (10, 18) = 1.241, p > .05, Adjusted R Square=.079; **=p<.05

Ten subscales of group processing were examined (table 5-3); the results revealed that this model for group processing was not statistically significant, F (10, 18) = 1.241, p>.05, and accounted for only 8% of the variance of reading comprehension gain. However, two of the ten subscales, "seek help from each other" (Beta=-.58, t=-2.31, p <.05) and "members feel free to talk and make suggestions" (Beta=.58, t=2.38, p <.05) have a significant beta coefficient. This indicates that these variables contribute in explaining 23% of variance of the dependent variable.

By comparing the contribution of the other independent variables, we decided to consider that the variables "seeking help" and "feel free to talk and

make suggestions" provide the strongest unique contribution in explaining variance of reading comprehension gain. Therefore, these variables are considered as an alternative model of predictors of reading comprehension gain and variables with a low contribution in explaining the variance of the dependent variable were excluded.

A new regression analysis was conducted using a model consisting of two independent variables of group processing "seeking help" and "feel free to talk and make suggestions" as predictors of dependent variable. The results are summarized in table 5-4.

Table 5-4.Regression analysis of group processing as predictors

Model 3	Unstandardized	Standardized	T	Sig.
	Std. Error	Beta		
(Constant)	1.71		.25	.805
Seeking help	.77	-.50	-2.89	.008*
Feel free	.94	.49	2.81	.009*

Note. F (2, 26) = 5.969, p < .05, Adjusted R Square=.262; **= p<.001; *=p<.05

Table 5-4 revealed that the model for group processing, operationalized as "seeking help" and "feel free to talk and make suggestions" was statistically significant, F (2, 26) = 5.969, p<.05, accounted for 26% of the variance of reading comprehension gain, and is thus statistically significant as predictor of reading comprehension gain. However, there was a different direction in relationships between them. In the predictor "seeking help" there was a negative correlation, meaning that the more group members seek help from others before asking the teacher, the less they improve in reading comprehension. On the other hand, the more members feel free to talk and make suggestions in the group, the more they improve.

By comparing the results of the analyses we can conclude that individual accountability and group processing are strong predictors of reading comprehension gain. However, by inspecting coefficient beta, t, and Adjusted R Square, we can say that individual accountability was more powerful than group processing in predicting reading comprehension gain.

5.7.4 Individual accountability, group processing and vocabulary gain

A regression analysis was also performed by using individual accountability and group processing variables as predictors of the dependent variable vocabulary gain. The same as for reading comprehension gain, the predictors of individual accountability included variables Q12 (understand exactly what to do), Q13 (frequency of talking), Q15 (get on with everyone, Q16 (help each other), Q19 (try to recognize ideas from others), Q20 (listen to one another), Q21 (help other in sharing ideas), and Q27 (take turn in talking and listening).

The predictors of group processing included Q18 (group share the work), Q29 (each member gives time to talk and make suggestion), Q30 (group members treat each other nicely), Q33 (group members offer help when needed), Q4 (group member seeking help from others), Q35 (group members feel free to talk and suggest), Q36 (decision made by group), and Q37 (group members do the best they can).

A preliminary analysis was conducted to ensure that there is no violation of assumption of normality, linearity, multi-collinearity, and homoscedasticity. The results revealed that the model for individual accountability was not statistically significant, $F(8, 20) = .740$, $p > .05$, and accounted for 8% of the variance of vocabulary gain. There was no significant association between the variables "understand exactly what to do, frequency of talking, get on with everyone, help each other, try to recognize ideas from others, listen to one another, help other in sharing ideas, and take turn in talking and listening" and the dependent variable vocabulary gain, suggesting that there was no relationship between individual accountability and vocabulary gain.

Furthermore, a regression analysis using the same model as for individual accountability revealed that the model for group processing was not statistically significant, $F(10, 18) = 1.232$, $p > .05$, and accounted for 7.6% of the variance of vocabulary gain. The variables "group shares the work, gives time to talk and make suggestion, treats each other nicely, group members offer help when needed, group members seek help from others, group members feel free to talk and suggest, decision made by group, and group members do the best they can" were not significant in predicting vocabulary gain, as indicated from the low of Beta and t coefficients. This suggests that there was no relationship between group processing and vocabulary gain.

5.7.5 Summary

To summarize, the current study suggests that (1) attitude has a strong relationship with reading comprehension gain but not with vocabulary gain; (2) there is a strong relationship between individual accountability and reading comprehension, but not with vocabulary gain; the best predictor in reading comprehension gain for individual accountability are “try to recognize ideas from others” and “listen to one another in group work”; and (3) along with individual accountability, group processing is a strong predictor of reading comprehension gain. The variables “seeking help” and “feel free to talk in groups” in group processing were the important predictors for reading comprehension gain. However, individual accountability was more powerful than group processing in predicting reading comprehension gain.

Chapter 6

Discussion

6.1 Summary

The main focuses of this dissertation were to examine (1) the immediate and transfer effects of reading strategy to improve reading comprehension and vocabulary knowledge in three different conditions: Scaffolding Cooperative Learning (SCL), Scaffolding Individual Learning (SIL), and Individual Learning (IL); (2) differential effects of scaffolding on lower and higher ability students in the SCL, SIL, and IL groups; (3) the relationship between ATGW, reading comprehension, and vocabulary gain; and (4) effect of individual accountability and group processing on reading comprehension and vocabulary gain in cooperative learning group. The three groups were compared in reading comprehension and vocabulary gain. The SCL and SIL groups read treatment texts with the help of scaffolding questions. The IL group read the texts with the help of a dictionary. The experiment consisted of a pretest, three intervention treatments and immediate effect tests, and a posttest that measured a transfer of skills.

Guided by scaffolding and cooperative learning theory from social psychological views, two reading comprehension classes (SCL and SIL) were set up as the experimental groups. The SCL group worked in small groups consisting of students of heterogeneous abilities. In study 1, each group consisted of 5 members whom had her/his own role: leader, writer, reader, speaker or checker. In study 2 group memberships were reduced to four in order to optimize collaboration within each group. The specific roles were assigned to each group member to ensure that all individuals in the groups were accountable for their contribution to group work.

Each member was provided with one reading passage, one worksheet, and one comprehension test to measure their achievement after the treatment at the end of the class meeting. The sequence of activities was as follows: the students read the text silently for a few minutes and then were given a worksheet consisting of scaffolding questions that help and guide them to have

a better understanding of the text. They worked on the worksheet together. At the end of class there was an individual reading comprehension test related to the text they had already read and discussed in their groups. The other experimental group (SIL) was provided with the same reading passage and the same scaffolding questions as used in the SCL group. The difference is that in this group participants were encouraged to answer scaffolding questions individually for 40 minutes. Before doing the comprehension test at the end of the activities, they had to check their answers by comparing them with a key answer sheet for 10 minutes.

Furthermore, the control group (IL group) had no scaffolding questions. This group was taught conventionally. The students in this group only received a reading passage and a reading comprehension test at the end of the classroom activities. All class time (50 minutes) was devoted to reading the text because they did not need to answer the scaffolding questions as the other two groups did. They were free to use the dictionary or any other means that might help them understand the text.

Several statistical analyses were conducted. A mix between-within ANCOVA was used to examine immediate effect and transfer effect of scaffolding on reading comprehension. A one-way ANOVA was used to examine the effect of scaffolding on reading comprehension and vocabulary gain. A Pearson's correlation analysis was used to examine relationship between ATGW, reading comprehension, and vocabulary gain. A regression analysis was used to examine the effect of individuals' contribution for group (individual accountability) and group processing on reading comprehension and vocabulary gain.

The main results can be summarized as follows. First, scaffolding provides a significant effect on reading comprehension gain in the SCL and SIL condition. The strongest effect of scaffolding in reading comprehension gain can be found in the SIL condition. In other words, scaffolding for reading comprehension is most effective in the individual learning condition.

Second, along with scaffolding, the students' initial level of ability in reading comprehension has a substantial effect on reading comprehension gain. In the SCL and SIL groups the low ability students gain more than the high ability students. This suggests that scaffolding, either in a cooperative or individual learning condition, is especially effective in improving reading comprehension in low ability students.

Third, for immediate effects of treatment on reading comprehension there are no differences among the SCL, SIL, and IL conditions. Only the transfer effect in the SIL condition is significantly greater. There is no significant effect of treatment on vocabulary gain.

Fourth, attitude has a strong positive relationship with reading comprehension gain, but not with vocabulary gain. The more positive ATGW, the more reading comprehension gain.

Fifth, there is a strong relationship between individual accountability and reading comprehension, but not with vocabulary gain; the best predictors in reading comprehension gain for individual accountability are "try to recognize ideas from others" and "listen to one another in group work."

Sixth, along with individual accountability, group processing is a strong predictor of reading comprehension gain. The variables "seeking help" and "feel free to talk in groups" in group processing were the important predictors for reading comprehension gain. However, individual accountability was stronger than group processing in predicting reading comprehension gain.

The convincing results above will be discussed further. The discussion will be focused on three main points: the effect of scaffolding on RC and vocabulary knowledge, the relationship between ATGW, reading comprehension and vocabulary gain, and finally the effect of individual accountability and group processing on reading comprehension and vocabulary gain.

6.2 The effect of scaffolding on reading comprehension

As summarized previously, the current study found that scaffolding in an individual learning condition provides a significant transfer effect on reading comprehension skills and gain. The effect of scaffolding in the cooperative learning group was no different from the no scaffolding group. This suggests that the effectiveness of scaffolding for reading comprehension is best to be implemented in the individual learning condition.

These results confirm previous findings that support significant effects of scaffolding in improving reading comprehension gain and skills in the EFL context, such as Attarzadeh (2011); Poorahmadi (2009); Safadi and Rababah (2012); Pishgadam and Ghadiri (2011). In comparing gain of a scaffolding and non-scaffolding group in an Iranian college, Attarzadeh (2011) found that scaffolding, level of proficiency, and text types provide a significant effect on reading comprehension. This also confirmed by Poorahmadi (2009) who found

that scaffolding has a powerful effect on reading comprehension achievement. These studies suggest that scaffolding can improve reading ability and general proficiency of EFL language learners. The current study also confirms the findings of Safadi and Rababah (2012): scaffolding helps students in improving their scores from pretest to posttest, which is an indicator of improvement of their performance in reading comprehension skill. Moreover, the scaffolded readers may have found a new appropriate strategy that fits with their learning style as independent readers, who now have better comprehension skills related to the text they read.

However, Poorahmadi (2009) did not measure immediate effect of scaffolding in each treatment over the times, as other studies did. His study found that scaffolding provides a direct effect in the improvement of reading comprehension scores in the three earlier interventions, but he did not find the improvement scores in the fourth intervention. This suggests that scaffolding does not always provide an immediate effect on reading comprehension. The effect may possibly occur some time after the intervention. By using a similar design (repeated-measure), the current study found that scaffolding provides a significant effect in the development of reading comprehension scores after 3 times of interventions (14 weeks), but it does not give an immediate effect during the three times of interventions. As such, this study is a direct contradiction of Poorahmadi's findings.

The current study found that implementing scaffolding in the cooperative learning condition does not significantly differ from implementing it in the individual learning condition. This finding confirms previous studies (Bejarano, 1987; Shaaban, 2006), which did not find that cooperative learning is more effective than the whole class reading condition in improving reading comprehension and vocabulary acquisition. Shaaban (2006) suggests that the effectiveness of cooperative learning is much dependent on other contextual variables, such as time (how long the researcher does the treatment), levels of ability, motivation, attitude, gender, and the complexity of interaction among students.

As far as RC ability levels are concerned, the current study supports Stockdale and Williams (2004) and Ghaith and Bouzeineddine (2003) in that the low ability students benefit more than the high ability students. These findings also agree with the previous theoretical literature of scaffolding that the

lower ability of students, the more support of scaffolding is needed (Donovan & Smolkin, 2002).

In a specific context of cooperative learning at the college level, Stockdale and Williams (2004) found that the cooperative learning condition provides the most effect only on the low and the average students, not for the high ability students. Similarly, Ghaith and Bouzeineddine (2003) also found that the low ability students benefited more than the high ability students in cooperative learning conditions. As also indicated from the current study, scaffolding and RC ability together contribute to a strong main effect on reading comprehension gain. Scaffolding is very helpful and effective for low ability students in achieving better gain. That is, the low ability students outperformed the high ability groups in the gain as an effect of scaffolding.

The most feasible reason is that in group work the high ability students spend most of the time re-explaining concepts that they had mastered previously to the average and the low ability students (Stockdale & Williams, 2004). Consequently, the high ability students have less time to master additional concepts individually in the cooperative learning condition. Or, as observed by Ghaith and Bouzeineddine (2003), the low ability students feel more comfortable with their cooperative learning experience than the high ability students. This is also supported by Suhendan and Aksu (2014): most of the students (67%) feel more comfortable in a cooperative learning condition. Also, as indicated from the current study, most of students (69%) prefer to learn in cooperative circumstances. In addition, students' affective responses in group work, such as feeling comfortable and feeling free in the group work are good predictors of a better reading comprehension gain. Therefore, the reason why the low level ability students perform better than the higher ability may also relate to attitudinal factors. The low ability students may have more positive attitudes towards learning and may have the motivation to do more and learn more than others. As a result, their self-efficacy increases and they want to achieve more in reading comprehension. This is in line with Haque (1989), who found that gain in English was affected by a favorable attitude and strong motivation in learning.

6.3 The effect of scaffolding on vocabulary knowledge

As reported in the results, the study revealed no significant differences between SCL, SIL, and IL groups in vocabulary gain. In other words, vocabulary gain was not affected by scaffolding, neither in the cooperative learning nor in individual learning condition. This result is not in accordance with the results of Study 1 and the previous studies that confirmed a significant relationship between reading comprehension and vocabulary gain. However, the current study confirmed the inconsistent relationship between reading and vocabulary acquisition as demonstrated by Pigada and Schmitt (2006). The inconsistent relationship may possibly be because of the dynamic and interactive process of reading (Dole et al., 1991) and the various strategies (Grabe, 1991) that make it possible for individuals to interact with text on their own. In the other words, the process of constructing meaning to comprehend the text can vary from one reader to another (Brantmeier, Callender & McDaniel, 2011).As a result, different readers will attain different levels and amounts of vocabulary knowledge.This also supports Roe, Smith, and Burns (2005), who claim that reading is a complicated activity involving reader, textual and contextual aspects. Specifically, Rapp and van den Broek (2005) propose that comprehension of a text is strongly influenced by characteristics of the readers and the text, which are primarily related to background knowledge and genre of text. These suggest that the effect of reading on vocabulary acquisition for each reader was not the same. The same text supplies different vocabulary and different levels of acquisition for each individual reader. As confirmed by Brantmeier, Callender, and McDaniel (2011), to comprehend the L2 text, background knowledge plays an important role. In turn, background knowledge also influences how much and how deep vocabulary knowledge can be acquired by individuals.

Therefore, the reason why scaffolding provides no significant effect on vocabulary gain of the SCL, SIL, and IL groups may because of individual reading activities and the dynamic or inconsistency effects of reading and incidental vocabulary gain as shown by Pulido (2004). In addition, the effect of reading was small. In the other words, reading activity may provide an effect on vocabulary learning, but the effect was considerably inconsistent for all of students.Therefore, results of the current research were not surprising, because the likelihood of intake vocabulary from reading was very limited and was affected by many interrelated factors. This is supported by Pulido's (2004)

findings that intake from reading as incidental vocabulary acquisition was affected by topic familiarity of the text. Other researcher, Rott (1999), shows that frequency of difficult words exposure in the text influences vocabulary acquisition. From the same input of reading, different attention of students on unfamiliar words also provides different intake for L2 vocabulary acquisition (Krashen, 1989). This is because the dynamic process of reading involves different background knowledge of students, levels of ability, strategies, attention, and intention.

Related to the current study, by finding that the effect size of differences among SCL, SIL, and IL groups was moderate (eta square=.09), I consider conventional strategies in the learning process of the control group as being able to facilitate students with the same advantages as in the scaffolding groups. As indicated from the observations during the intervention, in the control group teacher asked students to list difficult words they found from the text and using the dictionary to find meanings. So, all of students have their own dictionaries, consisting of a list of difficult words, synonyms, and antonyms. Furthermore, the teacher also suggested that the students generate their own questions and write them down on the white board to involve all of the students in the classroom in class discussion. This strategy might be effective and straightforward with regards to vocabulary learning and acquisition.

To sum up, vocabulary gain from reading was not only influenced by scaffolding, cooperative or individual learning, but also by strategies, background knowledge, individual attention, and other complex and multilevel factors. These factors need to be investigated further in the next studies. Therefore, interrelationship among dynamic factors in language learning at the individual, group or classroom level, school level, institution level, and other broader and global levels need to be considered to obtain a better understanding of the relationships and the effect of these relationships on the students' gain and development.

6.4 ATGW, RC, and vocabulary gain

As summarized previously, ATGW significantly contributes to reading comprehension gain, but this is not the case with vocabulary gain. This result confirmed previous research that reported positive relationships between attitude and reading performance. As demonstrated by Ghaith and

Bouzeineddine (2003), students who have a positive attitude also have a more positive self-concept and achieve more comprehension in reading than students who lack a positive attitude. This finding is similar to the result of the present study, which supports the presence of a strong relationship between ATGW and reading comprehension gain. In addition, we found that nearly 26% of variance of reading comprehension gain can be explained by the presence of the ATGW factor and the other way around. This suggests a strong correlation between ATGW and reading comprehension gain. This confirms previous studies, such as Kok (2010) and Bastug (2014), who found a positive relationship between attitude factors and reading comprehension achievement. Kok (2010) and Bastug also agree that attitude is an important predictor of reading comprehension.

The current study also confirms Alharbi (2008) and Khan (2011), who support a positive relationship between the attitudes factor and students' achievement in a different context of ESL/EFL. Alharbi (2008) showed that as an effect of cooperative learning in ESL reading contexts, students' performance in reading comprehension is correlated to students' attitudes factor. In the same way, Khan (2011) agrees with this finding in the EFL context by expanding the scope of research to include attitude towards English, towards learning English, and college students' achievement in the EFL.

The current study also supports Haque (1989), who concludes that students' achievement in English is influenced by favorable attitudes towards language learning and a strong motivation in learning. This relationship may be best explained from group dynamics and social psychological insight according to Dornyei (1997). From these perspectives, students who have positive attitudes towards learning will push their motivation of learning more than others. In turn, if this positive attitude is appreciated by other members in satisfactory group cohesion, it will increase their self-efficacy to contribute more in the group work, do more in learning, and as a result they attain more gain in learning.

Regardless of the correlation with the motivation factor, the findings in this dissertation also confirm that students who have a positive attitude and contribute more to group work also attain more gain in reading comprehension. These results are supported by Fisher and Frey (2008), who found that in context of learning in group work, the students who are doing better and retain information longer also enjoy their learning more and are more passionate in

completing tasks. These findings are also in line with Slavin (1991), who argues that an elaboration process through explaining things to each other in a small group could improve learning, since this process requires learners to reconstruct their knowledge before they can articulate it (Blankenstein, Dolmans, Vander Vlouten, & Schmidt, 2009). Also, Matsumoto (2010) agrees that elaboration, as well as explaining, summarizing, and concluding orally, is essential for long-term retention and better achievement in learning.

These results also indicate that the reason why positive attitudes correlate to better reading gain can be explained by the dynamics of group work, especially those associated to individual contribution in a group.

Furthermore, the current study shows that there is no relationship between ATGW and vocabulary gain. Thus, the interesting question is why students' attitude did not relate to vocabulary gain? A possible reason is the difference of individual attention to the lexicon of the text and the dynamic or inconsistency effects of reading activity on the incidental vocabulary gain (Hulstijn et al., 1996; Horst, Cobb, & Meara, 1998; Rott, 1999; Pulido, 2004; Pigada & Schmitt, 2006). These suggest inconsistencies effect of reading on vocabulary acquisition. These also suggest that attitudinal factors may provide different effects in learning gain.

In the other words, vocabulary gain is not only influenced by scaffolding, cooperative, or individual learning, but is also related to other complex and multilevel factors. Therefore, we need to consider interrelationship among dynamic factors in language learning at individual level, group or classroom level, school level, institution level, and other broader and global levels to obtain a better understanding about the relationships and effect of these relationships on students. In other words, complexity relationships between attitude and vocabulary gain from the wider and deeper insight are related to all possible aspects of language learning. Furthermore, acquisition needs to be taken into account.

6.5 Effect of individual accountability and group processing on RC and vocabulary gain

As suggested in the results, the variables "individual accountability" and "group processing" were found to be strong predictors of reading comprehension gain. Indicators of 'individual accountability", i.e. "try to recognize ideas from

others" and "listen to one another in group work" were found to be statistically significant as the best predictors of reading comprehension gain. In addition, predictors of "group processing", i.e. "seeking help" and "feel free to talk and make suggestions" in group work were also statistically significant as predictors of reading comprehension gain. These findings support Veenman et al. (2005) who found that elaboration in cooperative learning through help seeking and help giving were associated with students achievement. This is because these behaviours indicate that individuals in groups really get involved in a collaborative elaboration process to enhance their individual learning process to a higher level of achievement.

In a link to the current study, it is interesting to answer why "seeking help" behavior has a negative correlation with reading comprehension gain. The more students ask, the less they obtain the gain. It means that when students talk, such as in giving explanation in discussion, they learn more than when they ask questions. This supports Blankenstein et al. (2009), who give the explanation that in a small group, learning may improve learning achievement, because this process requires individuals to construct and reconstruct their knowledge before they can explain it in meaningful talking (Webb, 1989).

Even though asking questions requires individuals to reconstruct their knowledge beforehand, this process is not as complex as explaining for elaboration. In other words, explanation requires individuals to verbalize what they knew before, while by asking questions individuals only verbalize what they don't know to reach a new knowledge. This indicates that "asking questions" is a preliminary level in the elaborate process of learning, while giving explanations in a higher level of the elaboration process. In a learning process, students who ask more questions indicate that they have less background knowledge, so they need to compensate their weakness by asking questions. Therefore, the reason why the "seeking help" is associated to the decreasing gain may be caused by the lack of background knowledge that is indicated by this behavior. As indicated previously, background knowledge and individual contribution for group are the most important factors that influence to reading comprehension and vocabulary gain.

Furthermore, individual accountability was found to be more powerful than group processing in predicting reading comprehension gain. In other words, individual contribution in group work can be used as a strong predictor of reading comprehension gain. This is because individuals in groups do better

in retaining information, enjoy their learning more, and are more enthusiastic in completing tasks in group work (Fisher & Frey, 2008). In addition, individual contribution in group work through listening and recognizing other ideas requires individuals to reconstruct their knowledge, which is necessary for long-term retention (Blankenstein et al., 2009).

These findings are in accordance with previous studies that support positive relationships between students' contribution in group work and the importance of group processing in relation to students' achievement (Yager et al., 2001). They found that group processing, in which each of members of the group contributes effectively and knows exactly what to do and how to function effectively in the group, provides a positive effect in students' achievement. In contrast, individual accountability and group processing are not significant as predictors of vocabulary gain. This suggests that we need to consider the presence of more complex interrelationships in vocabulary gain, because in this process there are still much more predictor variables in the complex systems of learning and acquisition that may contribute to such an unpredictable effect.

Chapter 7

Conclusion, pedagogical implications, limitations and suggestions for further research

7.1 Conclusion

The main objectives of this dissertation are to answer research questions relating to (1) transfer effects of scaffolding on reading comprehension in cooperative and individual learning conditions, (2) immediate effects of scaffolding on reading comprehension in cooperative and individual learning conditions, (3) effects of scaffolding on vocabulary retention in cooperative and individual learning conditions, (4) effects of scaffolding on reading comprehension and vocabulary gain in the lower and higher ability students, (5) the relationship between ATGW, reading comprehension, and vocabulary gain in cooperative learning conditions, and (6) effects of individual accountability and group processing on reading comprehension and vocabulary gain.

To conclude, first, transfer effects of scaffolding both in the cooperative and individual learning condition was visible in the improvement of reading comprehension skills and gain. The greatest effect was in the individual learning condition. This suggests that the use of scaffolding worksheets experimented with in the current study, which consisted of comprehension questions that foster content learning of the texts, is more effective in an individual scaffolding classroom.

Second, scaffolding either in cooperative or individual learning conditions provides no difference in immediate effect on reading comprehension. As indicated from the mean differences between SCL, SIL, and IL groups, there was no difference in effect. This suggests that the use of scaffolding worksheets experimented with in the current study provide a significant effect after the interventions, which I have called a transfer effect.

Third, scaffolding provides a differential effect on reading comprehension gain for the lower and higher ability students in the SCL and SIL groups. The

low ability students improved more than the students of higher ability. As indicated from the mean gain difference between the three groups, the lower ability students of SCL and SIL groups performed significantly better than the IL group members. This suggests that the lower students benefited more than the higher ability students, both in the cooperative and the individual learning condition.

Fourth, scaffolding either in cooperative or individual learning conditions provides no significant effect on vocabulary retention and there was no difference between the lower and the higher ability students of the SCL, SIL, and IL groups. This suggests that increased reading comprehension skills as an effect of scaffolding, either in cooperative or in individual conditions, are not accompanied by an increase in vocabulary knowledge.

Fifth, in the cooperative learning condition, attitude towards group work has a strong relationship with reading comprehension gain, but not with vocabulary gain. This suggests that gain in reading comprehension may be influenced by behavior, affective and cognitive factors. How individuals felt, what they did, and what they thought within their groups correlates with gains in reading comprehension.

The fact that the scaffolding provides no significant effect on vocabulary gain may be due to the differences in individual reading activities, background knowledge, and the dynamic effect of reading and incidental vocabulary gain (Pulido, 2004). Reading activity may be essential effect for vocabulary learning, but in this study, the effect was inconsistent for the words and comprehension that were tested.

Fifth, there is a strong relationship between individual accountability and reading comprehension, but not with vocabulary gain. This suggests that the individual's contribution to the group was closely linked to their gain in reading comprehension. The more they contribute to the group, the more gain they obtain.

Sixth, group processing, in which individuals in a group help each other, also has a high correlation with reading comprehension gain. Group cohesiveness, in which students feel comfortable to work in a group and feel free to talk and make suggestions, has a close relationship with reading comprehension gain as well.

As a concluding remark, the current study presents additional evidence that scaffolding provides substantial transfer and differential effects on the

improvement of reading comprehension skills. In particular, scaffolding, both in the cooperative and individual learning conditions, benefits the lower ability students. In addition, attitudinal factors need also be considered as one of the important factors related to reading comprehension in the EFL context.

To end the conclusion, the effects of attitudinal factors were identified by means of a survey and may be debatable as abstract and latent factors of attitude are difficult to measure. As Larsen-Freeman (1997: 157) points out that even if we could identify and measure all of the factors related to attitude towards group work and learning gain, "complexity theory reminds us that we would still be unable to predict the outcome of their combination".

7.2 Pedagogical implications

The findings suggest that the scaffolding strategy applied in the current study is effective in increasing reading comprehension in the EFL context. Therefore, to implement scaffolding in the classroom, teachers may set up their lessons in cooperative or individual learning processes. The cooperative learning condition may engage students in collaborative learning activities that enable them to support each other to achieve better gains. However, the teacher would need to manage the classroom to facilitate students' contributions to their group, and to make sure that the students practice good social skills and have a good attitude (behavior, affective, and cognitive) to support group work. Specifically, a teacher may guide students to be accountable for the contributions made to the group, such as being active in listening, reading, and the discussing. For the individual learning condition, scaffolding may be implemented in guiding students' comprehension of texts through guidance questions related to the whole meaning of the text, via longer passages or shorter paragraphs, key sentences, and vocabulary items. For this reason, it is necessary for teachers to prepare their lessons in a structured way.

As is implied from the results of study 2, regarding the magnitude of the effect of scaffolding in increasing reading comprehension gain, we suggest that this strategy be implemented not only in the classroom but also in teacher training. Through scaffolding, teachers can support students by modeling, directing, questioning, giving feedback, and reinforcing. When teaching reading comprehension teachers can help students achieve higher levels of learning. Therefore, adequate "scaffolding skills" are an absolute must for teachers.

The essence of scaffolding is temporary assistance to help learners to achieve a higher level than the current one. To master skills in scaffolding skills does not have to be difficult for teachers, because the essence of scaffolding is something most humans do naturally and intuitively as for example when parents help children take their first steps. Just like parents scaffold for their toddlers, teachers can give students help in comprehending a text in an EFL situation. Being aware of the student's current level of understanding, the teacher can think of questions and activities that activate background knowledge so that the new knowledge is easier to understand. Teachers can anticipate difficult words and expressions and ask if students need help in understanding them. Teachers can model strategies to find main ideas by asking students to summarize or restate a conclusion in their own words. As scaffolding proved to be quite effective in the current study it is of essence that teachers become aware of effective scaffolding techniques.

As indicated by the results, whether in the cooperative or individual learning classroom, applying scaffolding in reading comprehension classrooms provides relatively more benefit for low ability students. This implies that different levels of ability need to be considered in implementing scaffolding for students with mixed abilities in the classroom. Basically, in every classroom we will encounter students with different learning styles, cognitive abilities, social skills, socio-economic backgrounds, and other individual differences. For this reason, teachers should realize that students need different kinds of support. In practice, teachers may support students by setting up their class in cooperative or individual learning conditions, so that scaffolding can be implemented effectively by the teacher or the groups of students. In a cooperative learning condition, putting students of different abilities in either heterogeneous or homogenous groups will have advantages and disadvantages for students. However, heterogeneous groups will be more feasible and natural for our classrooms and our social context. By putting students in heterogeneous groups, we can educate them socially in sharing and helping each other through cooperative learning.

In particular within the context of cooperative learning, teachers are encouraged to support students to be accountable for their contributions to group work, such as being more active in listening, reading, and discussing. This is because the students' gain in learning is mainly determined by the individual contributions to the groups. Therefore, teachers need to make sure

that team work in each group works well, and each of the members contributes optimally.

Furthermore, as suggested by study 3, ATGW has a strong relationship with reading comprehension gain in the cooperative learning condition. This implies that knowing students' attitude is beneficial for teachers in trying to obtain useful feedback from the students. By considering student-generated feedback on the group work, teachers will be able to decide which groups work well and which ones do not and then try to influence the group processing.

In the context of cooperative learning and group work in general, students' attitude plays an important role in relation to the success or the failure of learning. As demonstrated by the current findings, students' attitude affects individual contributions to the group, how students behave in discussion, the way in which they appreciate different ideas from others, argue to support or refuse opinions, and help each other out. These are the obvious indicators of reading comprehension gain. Therefore, teachers need to scaffold and facilitate students in teaching and learning processes that support better learning.

However, we need to realize that students' attitude is not always as simple as it is indicated by students' behavior, affective, or cognitive indicators. Students' attitudes always change and develop in unique and unpredictable ways. Therefore, teachers must know and understand better the interconnected factors of attitude in relation to learning processes that enable students to obtain the optimum gain.

7.3 Limitations and suggestions for further research

There are several limitations to this study. The findings pertain to a group of participants in the English Department at Jambi University, and they are not generalizable to different groups with different levels of proficiency, different first languages and different contexts. What is more, the small sample size provides only a limited amount of data and therefore even within the target group the findings may not necessarily be generalizable.

Second, the current research emphasizes a quantitative analysis of the effectiveness of scaffolding, so that the richness of qualitative phenomena in implementing scaffolding in different contexts of cooperative and individual learning cannot be explored in detail. In addition, I did not explore student interaction in the classroom, so I was not able to capture the dynamics of all of

the learning process in cooperative learning and in the individual learning condition.

Third, the attitudinal factors related to reading comprehension and vocabulary gain were limited to individual accountability, group processing, and exploring the relationship with reading comprehension and vocabulary gain without concerning any other variables such as motivation or the elaboration process in small groups, that might be influence the students' gain. Moreover, the group work may have been beneficial to other skills such as the students' spoken language development. Therefore, I cannot explain in more detail the relationship and contribution of these factors to reading comprehension and vocabulary gain.

Furthermore, to compensate for the limitations that have been mentioned above, I suggest investigating in more detail the contribution of attitude, motivation, and elaboration to reading comprehension and vocabulary gain in small group learning. In addition, the effectiveness of the individual contribution to the group and cohesiveness of groups in relation to students' gain also can be studied in more depth. Moreover, other variables such as students' learning style, gender, and group dynamics should also be considered in future research. In addition, the inter-relation between vocabulary (acquisition, knowledge, and size) and reading comprehension can be explored more extensively in relation to the cooperative learning methods applied by teachers in the EFL classroom.

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Appendices

Appendix A. Texts

Text 1

Flirting

1 IF YOU have ever sat alone in a bar, depressed by how good-looking everybody else seems to be, take comfort—it may be evolution playing a trick on you. A study just published in *Evolution and Human Behavior* by Sarah Hill, a psychologist at the University of Texas, Austin, shows that people of both sexes reckon the sexual competition they face is stronger than it really is. She thinks that this is _1_: it makes people try harder to attract or keep a mate.

Dr Hill showed heterosexual men and women photographs of people. She asked them all both _2_ how attractive those of their own sex would be to the opposite sex and how attractive the members of the opposite sex were. She then _3_ the scores for the former with the scores for the latter, seen from the other side. Men thought that the men they were shown were more _4_ to women than they really were and women thought the same of the women.

Dr Hill had predicted this outcome thanks to error-management theory—the idea that when people make errors of judgment, they, understandably, tend to make the error that _5_ in terms of damage. The notion was first proposed by Martie Haselton and David Buss, two of Dr Hill's colleagues, to explain a puzzling quirk in male psychology.

As studies show, and many women will attest, men tend to _6_ innocent friendliness as a sign that women are sexually interested in them. Dr Haselton and Dr Buss reasoned that men who are trying to decide if a woman is interested sexually can err in one of two ways. They can either _7_ she is not interested, in which case they will not bother trying to have sex with her; or they can incorrectly conclude she is interested, try, and be rejected. From an evolutionary standpoint, trying and being rejected comes at little expense,

except for hurt feelings. Not trying at all, by contrast, may mean the loss of an opportunity to, among other things, _8_ .

There is an opposite bias in women's errors. They tend to _9_ signs that a man is interested in a committed relationship. That, the idea goes, is because a woman who guesses wrongly that a man intends to stick around could end up raising a child alone.

On looks, _10_ , men and women make the same error. So go on, pluck up your courage: you may think the competition is frighteningly hot, but then so does she.

Source: Retrieved from http://www.examenblad.nl/examen/engels-havo/2008 reformated to fit the book size.

Text 2

The beauty of wind farms

(David Suzuki)

1. OFF the coast of British Columbia in Canada is an island called Quadra, where I have a cabin that is as close to my heart as you can imagine. From my porch on a good day you can see clear across the waters of Georgia Strait to the snowy peaks of the rugged Coast Mountains. It is one of the most beautiful views I have seen. And I would gladly share it with a wind farm.

2. However, sometimes it seems like I'm in the minority. All across Europe and North America, environmentalists are locking horns with the wind industry over the location of wind farms. In Alberta, one group is opposing a planned wind farm near Cypress Hills Provincial Park, claiming it would destroy views of the park and disturb some of the last remaining native prairie in the province. In the UK more than 100 national and local groups, led by some of the country's most prominent environmentalists, have argued that wind power is inefficient, destroys the ambience of the countryside and makes little difference to carbon emissions.

3. It is time for some perspective. With the growing urgency of climate change, we cannot have it both ways. We cannot shout from the rooftops about the dangers of global warming and then turn around and shout even louder about the "dangers" of windmills. Climate change is one of the greatest challenges humanity will face this century. It cannot be solved through good intentions. It will take a radical change in the way we produce and consume energy – another industrial revolution, this time for clean energy, conservation and efficiency.

4. We have undergone such transformations before and we can do it again. But first we must accept that all forms of energy have associated costs. Fossil fuels are limited in quantity and create vast amounts of pollution. Large-scale hydroelectric power floods valleys and destroys animal habitat. Nuclear power is terribly expensive and creates radioactive waste.

5. Wind power also has its downsides. It is highly visible and can kill birds. The fact is, though, that any man-made structure can kill birds – houses, radio towers, skyscrapers. In Toronto alone, it is estimated that 10,000 birds collide with the city's tallest buildings every year. Compared with this, the risk to birds from well-sited wind farms is very low.

6. Even at Altamont Pass in California, where 7000 turbines were erected on a migratory route, only 0.2 birds per turbine per year have been killed. Indeed, the real risk to birds comes not from windmills but from a changing climate, which threatens the very existence of bird species and their habitats. This is not to say that wind farms should be allowed to spring up anywhere. They should always be subject to environmental impact assessments. But a "not in my backyard" approach is hypocritical and counterproductive.

7. Are windmills ugly? I remember when Mostafa Tolba, executive director of the United Nations Environment Program from 1976 to 1992, told me how when he was growing up in Egypt, smokestacks belching out smoke were considered signs of progress. Even as an adult concerned about pollution, it took him a long time to get over the instinctive pride he felt when he saw a tower pouring out clouds of smoke.

8. We see beauty through filters shaped by our values and beliefs. Some people think wind turbines are ugly. I think smokestacks, smog, acid rain, coal-fired power plants and climate change are ugly. I think windmills are beautiful.

9. And if one day I look out from my cabin's porch and see a row of windmills spinning in the distance, I won't curse them. I will praise them. It will mean we are finally getting somewhere.

Source: http:///www.examenblad.nl/examen/engels-havo/2007 reformated to fit the book size.

Text 3

The fat of the land

Cristina Odone

1 The girl on the Stair Master pounds the steps, her breath short and sharp, her face red with exertion. A sweaty T-shirt clings to her – and even through the cotton you can make out the ridges of her spine. She looks like a skeleton. It hurts to look at her. Equally, it hurts to look at the man beside her. He too stands on the Stair Master, but the size of him means that you can hardly see the machine beneath his vast body. He breathes with difficulty, and sweat pours off him, soaking his T-shirt.

2 As in my gym, so in life. While the alarm was raised this week about 75 per cent of Britons being obese by 2020, an epidemic of young women suffering from anorexia is also sweeping the land: one in 10 girls fewer than 21 have been diagnosed with anorexia. Both trends reveal our unhealthy relationship with food.

3 Once upon a time meals were celebrations of family closeness, individual well-being, religious rituals. Today, fewer than 40 per cent of Britons claim to sit down at a table for meals; fewer than 30 per cent cook all their own meals. The sad truth is that most Britons view food with either indifference or suspicion. No wonder. Food has become confusing in a culture that simultaneously sings the praise of a slim line aesthetic and of the fast food, television, video games and other lazy leisure activities which guarantee this enviable 'look' won't be achieved.

4 According to Susie Orbach, author of *Fat Is a Feminist Issue* and *On Eating*, obesity 'is a response to people feeling attacked in their bodies'. On television and in movies and magazines 'model' men and women with perfectly trim, wonderfully toned bodies smile back at you: the frustration of not measuring up prompts you to reach for comfort food. In the face of constant – even if unspoken – criticism about your weight, a chocolate binge or stuffing yourself with a Big Mac or a Kentucky Fried Chicken wing is equivalent to sticking two fingers up at the body police out there.

5 American journalist Eric Schlosser condemns those fast food industrialists who, mainly concerned about the profit margin, ignore the effect their food has on our health. Cheap to make, oozing fat, high in salt, sugar and who knows what additives, fast food emerges as the primary culprit in our criminal abuse of our bodies. Eat junk food and you risk increasing your chances of contracting diabetes, cancer, heart disease.

6 More sinister still, as Schlosser shows, fast-food marketing men have seized upon children as 'brand-loyal, from cradle to grave': they target the under-eights with Disneyesque mascots, cartoon strips and related accessories, and bank on the child's loyalty for ever more – or until his first heart attack.

7 But big business not only threatens our health, it also shapes our body image. From the diet company that displays the 'before and after' pictures of a tubby housewife transformed into a slim glamour puss, to the television programme makers whose stars are all perfect size 10s, physical conformity is being pushed down our throats.

8 Some experts are finding this indigestible. Last January, Susie Orbach launched a campaign called 'Anybody', which aims to reshape our view of ourselves – so that we can accept that within the standard of beauty, diversity is a plus. Fat, thin, plump, and scrawny: Orbach and others hope that one day we will realize we are worth more than our weight in pounds and ounces.

Source: Retrieved from http:///www.examenblad.nl/examen/engels-havo/ 2007.

Text 4

Taking our leaders at face value

A new study suggests that how we respond to a candidate's face could determine who we vote for

Kurt Kleiner

Special to the Star

1. The qualities that voters think they can discern in a candidate's face have a surprisingly strong influence on how they vote. In fact, if you take the new research at face value, how much voters like a candidate's face is the only thing that will decide who wins or loses. What matters to voters isn't so much whether a candidate is attractive or not. Instead, voters look for facial cues for personality traits like aggressiveness, intelligence, honesty, friendliness and competence.

2. The surprising thing is not that people look for these cues – it's that judgments about a candidate's face all by themselves seem to predict whether he or she will win or lose the election. It seems to be the very features of the face that attract or repel voters. It's hard to untangle how actual voters, faced with a live candidate, are affected by the face, partly because their feelings about a candidate's policies and personality might affect their perceptions. So Anthony C. Little, a psychologist at the University of Stirling in Scotland, decided to use computerized "morphing" techniques to examine the phenomenon. In research he used the faces of candidates from eight real elections, including candidates George W. Bush and John Kerry from the 2004 U.S. presidential election. Then he used a computer-imaging technique to combine each face with a nondescript male face that had been created by averaging the faces of 10 university students. The result was a pair of faces that was not recognizable as either candidate, but nevertheless bore a sort of family resemblance to the originals – young, unblemished; they could have been the candidates' collegeage nephews. So, the altered Bush still has narrow-set eyes and a slightly heavy brow, the altered Kerry wide-set eyes and a long face.

3. Then Little asked people to look at the faces and say who they would vote for. In all eight rounds, the votes based on composite faces gave the same results as the actual elections. That bears emphasizing. Sitting at a computer screen, with nothing to go on but a face, a majority of the hundred or so volunteers consistently chose the same candidates as did the millions of

voters who had been exposed to newspaper articles, television reports, and intense campaigning. Although the percentages weren't exactly the same for each round, the volunteers always chose the same candidate who ended up winning the popular vote in the actual election.

4. In a second experiment, Little's researchers looked in detail at what people saw in the faces, and whether circumstances would change their choices. First people were surveyed about what they thought they saw in the altered Bush and Kerry faces. The Bush face was judged as more masculine and dominant. The Kerry face was rated as more attractive, forgiving, likeable and intelligent. Then researchers asked people to choose which face would be a better leader in a time of war, and which in a time of peace. Bush won 74 per cent of the war-time vote, while Kerry won 61 per cent of the peace-time vote. People will choose a candidate they perceive as dominant if they think he'll have to handle a war, but prefer intelligence and likeability as long as there's no shooting going on.

5. But how likely is it that people are really making their decisions based solely on faces? Even Little doesn't really believe it. After all, large chunks of the electorate still vote for a strong party line, and are going to vote for their party's candidate no matter what he or she looks like. On the other hand, undecided voters are more likely to base decisions on their judgment of individual candidates. Those are the ones who could be heavily influenced by a candidate's face, whether they realize it or not.

6. The problem is, despite our specialized cognitive machinery for dealing with faces, it turns out that faces aren't a very good guide for judging other people. Studies show that people think they can read all sorts of things about people based on their faces, including intelligence, basic character and personality traits. Unfortunately, the same studies show that we're not as accurate as we think we are.

7. Like everyone else, I know that I shouldn't judge a book by its cover. And like everyone else, I do it all the time. I'm usually pretty confident I'm right, but I'm also probably wrong. Misjudging someone at a party based on his face is one thing. Misjudging the leader of a country for the same reason is another, much more serious thing. Faces and good feelings are no way to choose a leader.

Source: http://www.examenblad.nl/examen/engels-havo/2008 reformatted to fit the book size.

Text 5

Why phones are replacing cars
And why this is a good thing

"PARKS beautifully", boasts an advertising hoarding for the XDA II, above a glimpse of its sleek silver lines. "Responsive to every turn", declares another poster. Yet these ads, seen recently in London, are not selling a car but an advanced kind of mobile phone. Maybe that should not be surprising. Using automotive imagery to sell a handset makes a lot of sense for, in many respects, mobile phones are replacing _1_.

Phones are now the dominant technology with which young people, and urban youth in particular, _2_. For what sort of phone you carry and how you customise it says a great deal about you, just as the choice of car did for a previous generation. In today's congested cities, you can no longer make a statement by pulling up outside a bar in a particular kind of car. _3_, you make a statement by displaying your mobile phone, with its carefully chosen ringtone, screen logo and slip cover. Mobile phones, like cars, are fashion items: in both cases, people buy new ones far more often than is actually necessary. _4_ are social technologies that bring people together; for teenagers, both act as symbols of independence. And cars and phones alike promote freedom and mobility, with unexpected social consequences.

At first, the _5_ of both cars and phones was defined by something that was no longer there. Cars were originally horseless carriages, and early models looked suitably carriage-like; only later did car manufacturers realise that cars could be almost any shape they wanted to make them. _6_, mobile phones used to look much like the push-button type of fixed-line phones, only without the wire. But now they come in a bewildering range of strange shapes and sizes.

It is to be _7_ that mobile phones are taking on many of the social functions of cars. While it is a laudable goal that everyone on earth should someday have a _8_, having cars all around produces mixed feelings. They are a horribly inefficient mode of transport – why move a ton of metal around in order to transport a few bags of groceries? – and they cause pollution, mainly in the form of nasty gases. A chirping handset is a much greener form of self-expression than an old banger. It may irritate but it is _9_. In the hands of a drunk driver, a car becomes a deadly weapon. That is not true of a phone (though terrorists have been known to rig mobile phones to trigger bombs). Despite concern that radiation from phones and masts causes _10_ health problems, there is no clear evidence of harm, and similar worries about power lines and computer screens proved unfounded. Less pollution, less traffic, fewer alcohol-related deaths and injuries: the switch from cars to phones cannot happen soon enough.

Source: http:// www.examenblad.nl/examen/ engels-havo/2007 reformatted to fit the book size.

Text 0-a

Farmers forced out so the lions can roam free

By David Blair, in Macavene

1 In the flood plain of the Olifants river, green shoots of maize grow as if by a miracle in an immensely dry expanse of bush.

2 These precious fields, watered all the year round, make the people of Macavene village in Mozambique dependent on __1__.

3 Yet thanks to the creation of one of Africa's biggest game parks, they will soon have to abandon the floodplain for new homes in __2__. There, if drought strikes, they will need western food aid.

4 Macavene and seven other villages find themselves inside the new Great Limpopo Transfrontier Park. For the first time in generations, Africa is expanding the area of wilderness roamed by elephant, lion and buffalo.The steady invasion of human beings into the habitat of wildlife is, for once, being __3__ .

5 This __4__ , soon due for an official opening, will span three countries and cover 14,000 square miles – almost twice the size of Wales.

6 By removing all boundary fences, South Africa's Kruger National Park will merge with a new reserve in neighbouring Mozambique and with Gonarezhou Park in Zimbabwe.

7 Today, 6,000 Mozambicans live inside the park. All will be uprooted, __5__ they have cultivated for generations to herds of wildlife. They have agreed to move and compensation will be paid. Even so they are quietly dissatisfied.

8 "Our wish of course is to stay here. This is our land, we know this place, we were born here," said Julio Mongue, who has lived in Macavene for all of his 59 years.

9 Every day Mr Mongue and his wife Salmina tend their fields in the floodplain, helped by their six daughters and four sons. In a dry region, they can feed themselves even if the rains fail. "These fields __6__ treasure here," said Mr. Mongue.

10 "But in the place where__7__, we will need the rain. In the years of drought, we will suffer."

11 Whenever the rains fail, millions of Mozambicans are __8__ by the World Food Programme. Their dependence on handouts is a key barrier to the country's development. The Limpopo Park may only make this worse.

12 Mozambique is already one of the world's poorest countries and few areas have enough land or water to accept families resettled from the park.

13 "We have been asked to move to the Chinhangane area," he said, "but the owners of that land are __9__ us. They say there is no room and no water for us. It's up to the park authorities to sort it out." But the clock is ticking.

14 Mr. Mongue and his family live barely 25 miles from the Kruger Park. All that stands between them and 2,000 lions, 1,000 leopards and 14,000 elephants is the Kruger's reinforced boundary fence.

15 Once that is removed, game will overrun Mr. Mongue's fields. Already, elephants have ruined crops nearby. People in Macavene say leopards killed two cows a fortnight ago. "The government __10__ more than us," said Enoque Cossa, 22. "If nothing is done for us, the foreign tourists are going to benefit more than we will."

Source: Retrieved from from http://static.examenblad.nl/9336110/d/ex2010/gt-0071-a-10-1-o.pdf reformatted to fit the book format.

Text 0-b

Helping hoodies hatch into good eggs

1 Picture this, Roger Hosking, a Derbyshire farmer, is collecting eggs with a young assistant. The assistant is carrying 15 dozen of them. And then for no apparent reason, he has thrown them at Roger who is dripping egg yolk and standing ankle deep in broken shells. Question is: what happens next? Does Roger tell him to get off the farm and never come back? Or say, in a mild sort of way, without judgement: "Why did you do that?" and end up with a better understanding of the teenager than anyone has had in the lad's life.

2 Roger, 64, has owned the 100- acre farm *Highfields Happy Hens* since 1967. On the farm he keeps free range hens (25,000), turkeys (1,600 - but that was before Christmas), a few sheep, pigs and goats. But what he and his wife, Beryl, principally farm are delinquents, the sort of hoodies that everyone else has given up on. The Hoskings have been working with the Youth Offending Service since their sheep were slaughtered during a foot and mouth1) outbreak and they were forced to find new ways of increasing their budget.

3 The delinquents they work with, have been expelled from school and spend their free time smashing up bus shelters and taunting the police. Roger has had his collarbone broken, and no end of windows smashed. But something about the farm works. The re-offending rate is almost nil. The only exception was one lonely boy who made sure he got caught, in order to be sent back to the farm.

4 Both Roger and Beryl have no degree in social science, no social work training. Their success is built on the twin foundations of egg collecting and love. Roger Hosking, who looks more like a jovial monk than a farmer, explains the magic of eggs. "At first the kids who come crush them, they are so angry and tense that they'll pick up three eggs and they are squashed. These youngsters come with angry hands. But their hands change. Within a day or two – certainly within a week – I can guarantee those angry hands have become gentle hands. They've never thought gentle before. Thinking gentle means I can have a decent conversation without swearing."

5 Egg collecting is not a mindstretching job. While two people are at it, they have time to talk. It is the talking that leads to the blow-ups, personal violence and sometimes egg throwing. When the lad who threw the 15 dozen eggs got over his explosion, he started to talk, then cry. Finally, he took off his shirt and showed Roger a back that was covered in wounds. They were from the dog that his father would set on him for misbehaviour.

6 Then there is love. It is a word Roger uses quite a lot, but in no soppy sense. One day Roger came back at lunch time to find the yard wrecked, the walls covered in graffiti. Roger told the culprit: "If you do that again, you'll have to go." Then he realized that those words had been said to that boy time and time again in his life. The Hoskings faced a choice: stop fostering or stop being farmers. They decided to tough it out. Profit came second. "To be honest with you, I wasn't a very successful farmer." Whatever happens, they will never again ask anybody to leave.

7 Roger and Beryl hope that the model of their *Highfields Happy Hens* will be rolled out across Britain. Roger believes: "Every town and city has kids being expelled from school and a market for free range eggs. If the Hosking principle could be applied nationwide, a major social problem would be solved."

[1]) *foot and mouth = penyakit kaki dan mulut, penyakit di mana hewan harus dimusnahkan.*

Source: Retrieved from http://www. examenblad.nl/examen/engels-kb-vmbo/2010 reformatted to fit the book size.

Text 0-c

I helped the police catch a thief

1. "Rubbing my eyes, I looked at my alarm clock - 4am! A loud bang and the sound of glass being smashed had waked me up. Who was making all that noise so early in the morning? When I heard my dad shout, "I've called the police - get out of here!" I realized what was going on. I felt sick to my stomach and my blood ran cold. Someone had been trying to break into our house!

2. I grabbed hold of my mobile. If Dad got hurt, we would need help fast. I looked out of the window. All I could make out was a figure in black running up our garden path in the direction of a car with its engine running. As our neighbors' security light flashed on I could see the number plate quite clearly. Suddenly I knew what to do. I'm quick at texting so I tapped the number into my phone before the driver sped off.

3. When the police arrived I grabbed my mobile and went downstairs. They were asking my parents loads of questions. But it had been dark and the burglar had worn a balaclava, so Dad couldn't give a good description. Mum said "Go back to bed …we'll deal with this."

4. I blurted out: "I saw the car from my window and I took down the number plate." Then I handed my phone to one of the policemen, PC Miles. He radioed the information to the police station, saying they would run a search to track down the owner of the car. A few days later PC Miles called round. "Good news," he told us. "We traced down the car and it seems we have arrested the burglars too".

5. A few months passed and we didn't hear anything more, so I thought the police had forgotten about us. Then completely out of the blue, Dad got a call. The man in the balaclava and the getaway driver had been accused of two other burglaries and were both going to trial. I had to give evidence as part of the case against them. But because of my age, I wouldn't have to go along to court and face the two men.

6. A policewoman called at our house and asked me lots of questions about that night to find out what I remembered. It was difficult as so much time had passed since then. I was glad, though, I didn't have to stand up in court like you often see on TV. The two men were sentenced and were sent to prison for several months. I felt proud. Because of my quick thinking they were punished for what they had done!"

Source: Retrieved from http://static. examenblad.nl/9336109/d/ex2009/913-0071-a-bb-1-o.pdf reformatted to fit the book size.

Appendix B. Test Instruments

Pretest

Reading Comprehension Test

Flirting

Read the text carefully and then chose the correct answer by crossing the letter!

1. A. curious
   B. humorous
   C. pointless
   D. useful

2. A. speed
   B. guide
   C. compel
   D. rate

3. A. added
   B. subtracted
   C. compared
   D. multiplied

4. A. intelligent
   B. emotional
   C. strong
   D. attractive

5. A. can be very risky
   B. has the least impact
   C. is hardly acceptable
   D. is highly noticeable

6. A. directly ask her if
   B. feel annoyed because
   C. mistakenly believe that
   D. quietly wonders whether

7. A. interpret
   B. misinterpret
   C. value
   D. translate

8. A. boast one's successes
   B. expresses one's feelings
   C. spread one's genes
   D. test one's emotions

9. A. imagine
   B. overestimate
   C. undervalue
   D. discover

10. A. however
    B. moreover
    C. of course
    D. therefore

Test 1

The Beauty of wind farms

Reading Comprehension Test

Choose the correct answer by crossing the letter!

1. What is the function of paragraph 1 in view of the rest of the article?
   To make clear that the writer
   A. has no objections to wind farms being part of the landscape.
   B. is the proud owner of a holiday home in the Canadian countryside.
   C. supports the protection of the Canadian natural landscape.
   D. very much enjoys the scenery surrounding his holiday home.

2. According to the writer's description on paragraph 1, how does the environment look?
   A. exciting
   B. cool
   C. ordinary
   D. gorgeous

3. Why does the writer feel that he is a minority in wanting windmills? (Paragraph 2).
   A. Many environmentalists argue that windmills are inefficient.
   B. Many environmentalists object when there are plans for wind farms.
   C. Many people think wind farms are useful for the environment.
   D. Many people think wind farms have a negative impact on natural habitats.

4. How could the second sentence of paragraph 2 ("All across ... wind farms.") also begin?
   A. And all across Europe... (addition)
   B. But all across Europe... (contrast)
   C. For all across Europe... (reason)
   D. So all across Europe... (consequence)

5. Which of the following is true according to paragraph 3?
   A. Instead of building more wind farms, we should try to save energy.
   B. The risks connected to wind farms can be reduced.
   C. Wind farms are necessary to help save the environment.
   D. Wind farms cannot generate all the electricity needed.

6. Find a sentence in paragraph 4 which has the main idea of this paragraph?
   A. Instead of building more wind farms, we should try to save energy.
   B. The risks connected to wind farms can be reduced.
   C. Wind farms are necessary to help save the environment.
   D. Wind farms cannot generate all the electricity needed.

7. Which one of the following is false according to the passage in paragraph 5-6?
   A. Those who are against wind mills do not mention the advantages.
   B. Almost every location is suitable for wind mills.
   C. To make wind energy worthwhile, you do not need to put many wind mills together.
   D. Birds have less to fear of wind mills than of other dangers.

8. Which one of the following passages corresponds to the passage in paragraph 6?
   A. Turbines are more dangerous for birds than climate change.
   B. The existence of windmills gives positive impact on environment.
   C. For birds' habitat, windmills are not as hazardous as climate change.
   D. For birds' habitat, climate change is not as hazardous as windmills existence.

9. For birds, what is the most dangerous?
   A. climate changes
   B. skyscrapers
   C. turbines
   D. windmills

10. Which of the following quotations summarizes the point made in paragraphs 7-8?

A. “smokestacks belching out smoke were considered signs of progress”

B. “We see beauty through filters shaped by our values and beliefs.”

C. “Some people think wind turbines are ugly.”

D. “I think windmills are beautiful.”

Test 2

The fat of the land

Reading Comprehension Test

1. What is the function of paragraph 1?
   A. To show that stair master is a fitness machine that is good for everyone.
   B. To show that both thin people and fat people make use the gym.
   C. To show that exercising in a gym is necessary for both thin and fat people.
   D. To show two examples of unhealthy relationship with food.

2. What is the main function of paragraph 3?
   A. To elaborate the statement made in the last sentence of paragraph 2.
   B. To give further examples of the situation described in paragraph 2.
   C. To present a new point of view about the issues brought up in the previous paragraph.
   D. To sketch some consequences of the developments mentioned in the previous paragraph.

3. Which explanation for obesity is given in paragraph 4?
   A. Fast food has a negative influence on people's daily eating habits.
   B. People overeat as a protest against being made to feel imperfect by the media.
   C. The women's liberation movement has condemned dieting as being basically sexist.
   D. Unhealthy food products are being advertised on too large a scale.

4. According to Eric Schlosser, what is the heart of the problem in the fast food industries? (paragraphs 5)
   A. Fast food contains too much fat, salt, sugar, and additives.
   B. Fast food is bad for your health.
   C. Fast food is cheap to make.
   D. Food industrialists will do anything to make a profit.

5. What is the tone of "or until his first heart attack" (end of paragraph 6)?
   A. Cheerful.
   B. Indifferent.
   C. Neutral.
   D. Sarcastic.

6. What is big business criticized for in paragraph 7?
   A. For attaching too much importance to the appearance of employees.
   B. For forcing ideas on people about what they should look like.
   C. For profiting from problems that it has created itself.
   D. For warning people not to do that way.

7. Which of the following could best serve as a slogan for the "Anybody" campaign?
   A. Beauty comes in various shapes.
   B. Be smart and be slim.
   C. Fast food is fat food.
   D. Good looks are a weighty matter.

8. At the end of paragraph 3 the writer said that "Food has become confusing in a culture that simultaneously sing the praise of a slimline aesthetic…". This means that
   A. Food is a mistrustful thing.
   B. Food plays important roles in the recent culture.
   C. Food contributes to support good looking.
   D. Difficult to choose good meal.

9. According to "Anybody" campaign launched by Orbach, the text implies that
   A. The writer disagrees with the campaign.
   B. The writer agrees with the campaign.
   C. The writer has no doubt that the campaign will be successful.
   D. The writer has no doubt that the campaign will be unsuccessful.

10. "Fast food emerges as the primary culprit in our criminal abuse of our bodies." It is clear from this passage that
   A. High risk to consume fast food.
   B. Eat fast food is criminal matter.
   C. Fast food is dangerous to our healthy.
   D. No need to eat junk food.

Test 3

Taking our leaders at face value

1. What is the main function of paragraph 2?
   A . To analyse the research into the subject matter.
   B. To describe the research into the subject matter.
   C. To question the methods to research the subject matter.
   D. To stress the importance of the research into the subject matter.

2. What is the function of computerized "morphing" techniques used by Anthony C. Little?
   A. To predict whether candidates win or lose on voting.
   B. To judge candidates' faces in light to their personality.
   C. To evaluate candidates personality and ability based on face.
   D. To examine voter's tendency in selecting candidates based on the face.

3. Which of the following is made clear by the last sentence of paragraph 2?
   A. In the computer images great care was taken to make Bush and Kerry look very unlike each other.
   B. Some facial characteristics of Bush and Kerry were maintained in the computer images.
   C. The Bush and Kerry computer images were given facial characteristics that made recognition more difficult.
   D. The Bush and Kerry computer images were given facial characteristics that made recognition easier.

4. "That bears emphasizing." (paragraph 3). What does the author want to make clear with this remark? He thinks that the outcome of the research mentioned in the text
   A . is highly remarkable.
   B . may not be trustworthy.
   C. should be ignored.
   D . was common knowledge all along.

5. Which of the following fits the gap in paragraph 4?
   A. Apparently
   B. Instead
   C . Nevertheless
   D. Unexpectedly

7. Who are, according to paragraph 5, the strongest off appearance on choosing of a politician?
   A. Anthony C. Little
   B. undecided voters
   C. strong party line voters
   D. individual candidates

8. What does paragraph 6 make clear?
   A. Attractive people are not necessarily the best politicians.
   B. How people determine whether or not they trust anyone.
   C. The opinions people form about others may not always be correct.
   D. Why studies into face recognition come up with conflicting results.

9. "Misjudging someone … a leader." (paragraph 7)
   How can the tone of this part of the text be characterized?
   A. As arrogant.
   B. As cynical.
   C. As disapproving.
   D. As objective.

10. Faces are not a good guide for judging other people. But in fact why do many people still consider it in selecting leader candidates?
    A. They think that all of human performance can be seen from the face.
    B. Basic character of human is reflected from the face.
    C. Human's cognition and behavior can be determined by the face.
    D. They have no other reason.

Posttest

Name of student :
Student's Number :
Group : C/ I/ N (Circle one) Date:

Why phones are replacing car

Read the text carefully and then cross the correct answer!

1. A. cars
   B. transporters
   C. vehicles
   D. carter

2. A. communicate
   B. define themselves
   C. entertain themselves
   D. grow up

3. A. after all
   B. furthermore
   C. instead
   D. likewise

4. A. among
   B. both
   C. all
   D. they

5. A. design
   B. necessity
   C. quality
   D. value

6. A. besides
   B. by contrast
   C. similarly
   D. moreover

7. A. doubted
   B. regretted
   C. welcomed
   D. surprised

8. A. line phone
   B. auto mobile
   C. mobile phone
   D. mobile device

9. A. affordable
   B. fashionable
   C. popular
   D. safe

10. A. social
    B. environment
    C. culture
    D. health

Vocabulary Test

Name :
Date :
Time : 20 minutes

Please circle the correct answer!

1. CABIN
   a) farm
   b) garage
   c) porch
   d) small house

2. TO LOCK HORNS
   a) belch
   b) dance
   c) fight
   d) jump

3. AMBIENCE
   a) atmosphere
   b) challenge
   c) emission
   d) environment

4. URGENCY
   a) consumption
   b) damage
   c) pressure
   d) production

5. DOWNSIDE
   a) collision
   b) disadvantage
   c) estimate
   d) visibility

6. THREATEN
   a) endanger
   b) erect
   c) exist
   d) spring up

7. BELCH
   a) burp
   b) concern
   c) get
   d) pour

8. INTRICATE
   a) active
   b) complex
   c) dynamic
   d) obscure

9. INADVERTENTLY
   a) by accident
   b) fiendishly
   c) intentionally
   d) on purpose

10. TRICKY
    a) difficult
    b) incredible
    c) nimble
    d) simple

11. DUBIOUS
    a) Distinct
    b) Doubtful
    c) Separate
    d) Smart

12. HILARIOUS
    a) Funny
    b) Humorous
    c) Serious
    d) symptomatic

13. OBESE
    a) Overweight
    b) Sharp
    c) Skinny
    d) vast

14. REVEAL
    a) begin
    b) end
    c) hide
    d) show

15. SIMULTANEOUSLY
    a) at the same time
    b) before
    c) immediately
    d) later

16. TRIM
    a) clean
    b) dirty
    c) fat
    d) slim

17. PROMPT
    a) binge
    b) set off
    c) smile
    d) stuff

18. CULPRIT
    a) additive
    b) industrialist
    c) risk
    d) wrongdoer

19. TARGET
    a) aim at
    b) seize upon
    c) show off
    d) take away

20. DISPLAY
    a) exhibit
    b) gather
    c) hide
    d) undo

Appendix C. Scaffolding Worksheets

Worksheet 1

The Beauty of wind farms

The following questions are meant to help you understand the text better. Please answer these questions in your group on a separate piece of paper. Clearly put the number of each question in front.

---

1. This article is about wind mills, what are they and how do they look? Do you think people like to look at them? Why (not)?
   **Wind mills are very tall towers with a blade that generates electricity. Many people believe that they make the environment look ugly.*

2. We all know that the climate is changing because we consume too much energy. Do you know some negative influence of this on the environment?
   **When the climate changes we will have floods, droughts and other natural disasters.*

3. Can you name some environmentally sound solutions to produce green energy?
   **Some would be to use sun, wind or water power.*

4. Question for paragraph 1
   The writer has a cabin (vacation house) somewhere. Where is it located? What is a porch? How does the environment look? Does the author like this place?
   **The cabin is on a small island near Canada. A porch is a kind of veranda directly outside the house. The environment and view is beautiful. He loves this place very much.*

5. Questions for paragraph 2
   The author feels he is a minority in wanting windmills. Why?
   ** Most environmentalists object to windmills.*

6. Are environmentalists usually positive or negative about "good" energy?
   **Environmentalists are usually positive about good energy, such as wind mills.*

7. When animals fight they may "lock horns". What does this expression mean here?
   **It means that they fight. In the text, environmentalists fight with the wind industry.*

8. What is the main reason, environmentalists do not like wind farms?
   **The main reason is that they do not like the way they look.*

9. What does 'ambience mean in the following sentence: *The <u>ambience</u> of the restaurant is very good. It has pleasant tables, chairs and friendly atmosphere.* Is this the same meaning as in the text?
   **The ambience of the countryside means the general atmosphere, how it looks and feels.*

10. Questions for paragraph 3
    Imagine someone wants to keep his money AND buy a new TV. His friend may say "*<u>you cannot have it both ways</u>*", what does this mean? Is this the same meaning as in the text?
    **The expression means that the two together is not possible. You have to make a choice. In the text you cannot have BOTH good energy AND be against windmills.*

11. "*<u>Shout from the rooftops</u>*" means to say something very loudly and publicly. According to the text, what two things do environmentalists usually 'shout from the rooftops'?
    **They shout that global warming is dangerous. They also shout that windmills are dangerous.*

12. What are the 'good intentions'?
    **Good intentions are the willingness/plans to do the right thing.*

13. What does the author suggest we all should do?
    **We must change the way we produce and use energy.*

14. Questions for paragraph 4
    What are the associated costs for a) fossil fuels, b) hydro-electric power and for c) nuclear power?
    **(a) Fossil fuels: limited in quantity, pollution. (b) Hydroelectric power: floods valleys, destroys places where animals live.(c) Nuclear power: expensive and radioactive waste (which is dangerous to get rid of).*

15. Questions for paragraph 5
What are the associated costs for windmills?
**Highly visible and can kill birds.*

16. Does the author believe that too many birds will collide with (and get killed) by windmills, Why (not)?
**He agrees that birds will get killed, but not more than by tall buildings in a city.*

17. Questions for paragraph 6
For birds, what is more dangerous than turbines?
**The changing climate*

18. Does the author believe wind farms should be allowed any- where?
**No. First people should conduct studies that look to see how it will affect the environment.*

19. What does the author mean with "not in my backyard" approach?
**People do not want them close to where they live.*

20. Question for paragraph 7
Why did Mostafa like "smokestacks belching out smoke" as a child? (Note that to belch literally means "to burp" or "to expel gas noisily from the stomach through the mouth")
**He liked the towers with smoke (= industry) because to him it meant progress (modernization).*

21. Question for paragraph 8
What does the first sentence in paragraph 8 mean "We see beauty through filters shaped by our values and beliefs?"
**Our upbringing (the environment we grow up in) has influenced the way we look at things, and it may influence whether we see something as beautiful or ugly.*

22. Question for paragraph 9
*What is the author's wish for the future? Which cabin is he referring to?
**He wishes that there will be windmills close to his own cabin in Canada.*

Worksheet 2

The fat of the land

The following questions are meant to help you understand the text better. Please answer these questions in your group on a separate piece of paper. Clearly put the number of each question in front.

Discuss or think about before you read

1. Which of the two do you think "The fat of the land" means: the country is very rich or the country is very poor?
   **The country is very rich.*

Question for paragraph 1

2. The first paragraph is about a scene in a gym (= fitness center). What contrast is the author trying to show?
   **Contrast between the fat and the thin.*

Question for paragraph 2

3. Name some examples of an "" unhealthy relationship with food".
   **The obesity and anorexia.*

Question for paragraph 3

4. What type of stories start with "Once upon a time…."? What did people used to do in Britain? What do people do now?
   **Narrative. People consider foods as an important thing for celebration in human life. Now, food has become confusing in human culture.*

5. At the end of paragraph 3, the writer said that "Food has become confusing in a culture that simultaneously sings the praise of a slim line aesthetic…achieved". What does this mean?
   **In one hand, people view food suspiciously to avoid obesity to have a slim body, in the other hand what they did, such as consuming fast food and other lazy leisure activities are contradictory with their aim in having the slim body.*

Questions for paragraph 4

6. In your own words, explain why Sussie Orbach thinks obesity "is a response to people feeling attacked in their bodies."
   **Because the fat people is just a victim of inequality view spread by media in judging human value by their weight. The slim is beautiful and the fat is the ugly*.

7. At the end of paragraph, what does "sticking two fingers up at the body police out there" mean?
   **agree with the view of body image standard (slim vs fat).*

Questions for paragraph 5

8. Why does Eric Schlosser think that fast food is bad for your health?
   **Eat junk food increasing the risk of contracting many diseases like diabetes, cancer, and heart disease.*

Questions for paragraph 6

9. Why do fast food marketing men target young children?
   **Young children more loyal and easier to persuaded by marketing attack.*

Questions for paragraph 7

10. What two things is Big business criticized for?
    **business in healthy and body image.*

Questions for paragraph 8

11. What does Orbach mean by the "Anybody" campaign? What is the major aim of her campaign?
    **Campaign for all of us. The main aim is to change our view about ourselves. Diversity is the main point. She insists that human value is not only about our weight.*

Worksheet 3

Taking our leaders at face value

The following questions are meant to help you understand the text better. Please answer these questions in group on a separate piece of paper. Clearly put the number of each question in front.

1. "To take at face value" literally means that you only look at the surface (face) to judge whether something or somebody is good or not. What does the title of this article mean?
   **The title means that voters may elect their leaders based on their facial features.*

2. What is important for you when you are going to vote for a new leader?
   **Their qualification, intelligence, and other good characteristics like patience, friendliness, and helpfulness.*

3. Is it wise to judge a candidate based only on his/her face? Why (not)?
   **No, it is not. Because a face cannot represent the candidate's true personality.*

Questions for paragraph1

4. What do people believe they can read from facial cues?
   **People can read facial cues for personality traits, like aggressiveness, intelligence, honesty, friendliness, and competence or performance.*

Questions for paragraph 2

5. What exactly is surprising (first line in paragraph 2)?
   **It is surprising that people really use their judgment about a candidate's face to decide who to vote for.*

6. Explain in detail how Little set up has experiment.
   **Little used the faces of candidates from real elections and combines them with photographs of 10 students to create 'average' faces. Then, he asked people who they would vote for.*

7. What are computerized "morphing" techniques? What is the result of these techniques?
   **A computerized 'morphing' technique to combine photographs of different faces to make one new face. The result was a pair of faces that was not clearly like the candidates, but did look a bit like them.*

Questions for paragraph 3

8. In your own words, summarize the results of Little's experiment mentioned in paragraph 3?
   **In all eight rounds, the voters choose the same candidate as in the real election.*

Questions for paragraph 4

9. In your own words, summarize the results of Little's experiment mentioned in paragraph 4?
   * *When circumstances change, voters may choose another candidate. For example, Bush was more likely to be elected in war time than Kerry in peace time.*

Questions for paragraph 5

10. Which people are most likely to judge a candidate by his or her face?
    **Voters who have not made up their mind yet.*

Questions for paragraph 6

11. Why is it not a good idea to judge a person by his or her face?
    **Because the studies show that people cannot really judge a person by facial features very well.*

Questions for paragraph 7

12. To "take something at face value" and to "judge a book by its cover" mean about the same thing. Explain the similarity.
    **Both are the same in looking at things on the surface layer or performance only without considering other aspects (personality traits and content of the book).*

Worksheet 4

Text 0-a

Farmers forced out so the lions can roam free

Choose the correct answer from the given answers!

1. A. maize grow
   B. no one but themselves
   C. Olifants river
   D. a miracle

2. A. another places.
   B. a dry region
   C. a similar region
   D. a farm land

3. A. applauded
   B. helped along
   C. turned around
   D. witnessed.

4. A. habitat of the wildlife
   B. wild animal park
   C. farmer homeland
   D. vast conservation area

5. A. staying in land
   B. moving in land
   C. turning over land
   D. working over land

6. A. are the most important
   B. are the most interesting
   C. are the most challenging
   D. are the most cultivating

7. A. we are going to live
   B. we are going to work
   C. we are going to stay
   D. we are going to move

8. A. kept reside
   B. kept exist
   C. kept alive
   D. kept settle

9. A. refusing to invite
   B. refusing to accept
   C. refusing to stay
   D. refusing to give

10. A. values animals
    B. values human
    C. values parks
    D. values land

Worksheet 5

Text 0-b

Helping hoodies hatch into good eggs

The following questions are meant to help you understand the text better. Please answer these questions on a separate piece of paper.

Discuss or think about the following two questions before you read the text.

1. Have you ever imagined delinquents working at a chicken farm?

2. Is it possible working in the farm can be applied as an aid to solve the delinquent problem? This article is about Roger Hosking, a farmer who combines rearing livestock with aiding the delinquents.

Question for Paragraph 1

1. For no apparent reason, Rogers' assistant threw him 15 dozen of eggs. What atmosphere wants to be described by the author?
   **working with delinquents is dangerous and difficult*

Question for Paragraph 2

2. When and why did Roger and Beryl start working with the Youth Offending Service?
   * *Since their sheep were slaughtered during a foot and mouth outbreak and they were forced to find new ways of increasing their budget.*

3. For what reason they build their farm? Profit or other reasons?
   * for delinquents not profit oriented

Question for Paragraph 3

4. What situation are implied from this paragraph?
   **in spite of their delinquencies they are responsible to their job in the farm.(meskipun berperilaku menyimpang mereka tetap bertanggung jawab dengan pekerjaannya di peternakan).*

5. "The re-offending rate is almost nil" means that …
   **hampir mustahil kembali seperti semula*

Question for Paragraph 4

6. Roger and Beryl have no degree in social science and no social work training, but they success in they have done. What are their keys of success?
   ** built on the twin foundations of egg collecting and love.*

7. Roger Hosking looks more like a jovial monk than a farmer. Does it implied physically or psychologically?
   **Perhaps physically and psychologically.*

8. How could Roger change the delinquents from angry hand to gentle hand?
   **by working with him in collecting eggs*

9. What does Roger means with magic of eggs?
   **collecting eggs has a power to change the delinquents from the bad to the good habit,*

Question for Paragraph 5

10. Egg collecting is not a mindstretching job. What does it mean?
    **pekerjaan yang tidak menegangkan untuk otak (no need/less using brain to work)*

11. What makes the boy who threw the 15 dozen eggs cried?
    **he realized mistakes he has done after collecting eggs*

12. In the sentence "They were from the dog that his father would set on him for misbehaviour," 'they' refers to …
    ** the wound*

Question for Paragraph 6

13. Roger uses word 'love' quite a lot, but in no soppy sense. It means that
    **He loves the boy on his own way, with no cry, whatever they are*

14. The Hoskings faced a choice: stop fostering or stop being farmers. Which one is selected by them?
    **They decided not to run away from them and consistent in love to misbehavior boys.*

15. Roger said that he wasn't a very successful farmer. Why?
    **His farm was not only focusing on profit oriented, but also aiding delinquent.*

Question for Paragraph 7

16. What does Roger and Beryl hope for the future?
    **Their model will be rolled out across Britain.*

17. A major social problem would be solved if the Hosking principle could be applied nationwide. What is the main argument supported this proposition?
    * *Every town and city has kids being expelled from school and a market for free range eggs. They can be cured by 'collecting eggs therapy'.*

Worksheet 6

Text 0-c

I helped the police catch a thief

The following questions are meant to help you understand the text better. Please answer these questions on a separate piece of paper.

Discuss or think about the following two questions before you read the text

1. Has anyone ever tried to break into your house?

2. What should people try to do when they witness a burglary? This article is about Beth, a brave young girl who managed to stop a crime with her fast thinking and texting skills!

Question for Paragraph 1

3. Why did Beth rub her eyes?
   **she was very sleepy*

4. Which sentence shows Beth was shocked or scared?
   **I felt sick to my stomach and my blood ran cold.*

5. What did Beth realize when she heard her father shout?
   **answer: Someone had been trying to break into our house!*

Question for paragraph 2

6. Why did Beth grab her phone?
   **She wanted to call the police in case her father got hurt.*

7. When she looked out the window, what did she see?
   **the burglar running to a car*

8. Why could Beth see the number plate clearly?
   ** the neighbor's security light flashed.*

9. What did Beth do when she saw the number plate?
   **She tapped the number into her mobile phone before the thief run away with his car.*

10. "I am quick at texting". What does it mean?
** Beth is able to type and send a text message on a mobile phone very fast*

Question for paragraph 3

11. Why couldn't her father give a clear description when the police asked him a lot of questions?
** Because it happened about 04.00 a.m so the situation was too dark and the burglars wore a balaclava/ something to cover his head.*

12. Her mother said "Go back to bed …we'll deal with this." The statement implied that ….
**Her mother regards her as a child and she is too young to know what had happened.*

Question for paragraph 4

13. What does "blurt out"mean?
* Say quickly and impulsively

14. What information did she give the police?
** She gave him the number plate of the burglar.*

15. What did the policeman do when he received the information?
** She helped the police by giving information about number plate of the car driven by the burglars*

16. What kind of "good news" did the policeman give Beth's family?
** The police were able to trace down the car and caught the thieves.*

Question for paragraph 5

17. **"Then completely out of the blue"** *means* that something happened unexpectedly. According to the text, what happened unexpectedly?
** Beth's father got a call from the police telling him that the burglar and the driver had been caught and they were going to trial.*

18. Beth is one of eye witnesses in the crime, but why could she not give evidence against them in court?
** Because she was too young to be a witness in a court*

Question for paragraph 6

19. Why was it difficult for Beth to answer all the questions?
*Times had passed by; it was a long time ago

20. What happened to the men?
    * They were sentenced and sent to prison for several months.

21. Why was Beth proud?
    * Because of Beth's fast thinking and texting the police managed to send the burglars to jail.

Appendix D. Questionnaire

Name : Student number:
Place/date of birth: Original:

Jawablah pertanyaan-pertanyaan berikut ini.

1. How long have you studied English?
   a. more than 3 years (Score 2)
   b. less than 3 years (Score 1)
   Since I was……
2. Where did you study ?
   a. within Jambi province
   b. not in Jambi province

3. Have you ever taken English course?
   a. Yes (score =2)
   b. No (score =1)

4. Have you ever taken English standard test such as TOEFL?
   a. Yes (Score =2)
   b. No (Score=1)

5. How do you study English?
   a. (score 1 = standard)
   b. (Score 2= special)

6. How do you improve your English?
   a.(score 1 = standard)
   b. (Score 2= special)

7. What do you think your English
   a. Poor (Score = 1)
   b. Good (Score=2)
   c. Excellent (score=3)

8. Do you prefer study within a group or individually?
   a. In group (score=1)
   b. individualy (score=2)
   c. both, in group and individual (score=3)

9. What is your motivation to study English?
   a. I like English (score= 1)
   b. My family encourage me to study English (score=2)

Please put a around the letter of answer that you think is most suitable for each question.

10. How interesting did you find your work in the group?
    a. very interesting (score 4)
    b. fairly interesting (score 3)
    c. quite interesting (score 2)
    d. Not interesting at all (score 1)

11. How difficult did you find your work in the group?
    a. Extremely difficult (score 1)
    b. fairly difficult (score 3)
    c. Just about right (score 2)
    d. very easy (score 4)

12. Did you understand exactly what the group was supposed to do?
    a. I knew exactly what to do (score 3)
    b. At first I didn't understand (score 2)
    c. It was never clear (score 1)

13. How many times approximately did you have the chance to talk during group work?
    a. none (score 1)
    b. once or twice (score 2)
    c. several times(score 3)
    d. a lot (score 4)

14. If you talked less than you wanted to, what were the main reasons?
    a. I felt afraid to give my opinion (score 1)
    b. somebody kept interrupting me(score 2)
    c. I was not given the chance (score 3)
    d. nobody listened to me (score 4)

15. Did you get on with everyone in your group?
    a. with none of them (score 1)
    b. with a few (score 2)
    c. with about half of them (score 3)
    d. with all of them (score 4)

16. Did you help each other with the task?
    a. all the time (score 4)
    b. most of the time (score 3)
    c. sometimes (score 2)
    d. not at all (score 1)

17. Would you like to work with this group again?
    a. Yes (score 2)
    b. No (score 1)

18. How well did your group share the work?
    a. right on (score 4)
    b. pretty good (score 3)
    c. Ok (score 2)
    d. not so good (score 1)

What did you do to help one another?

19. Did you try to recognize ideas in others?
    a. right on (score 4)
    b. pretty good (score 3)
    c. Ok (score 2)
    d. not so good(score 1)

20. Did you listen to one another?
    a. right on (score 4)
    b. pretty good (score 3)
    c. Ok (score 2)
    d. not so good (score 1)

21. Did you try to help other members share their ideas?
    a. right on (score 4)
    b. pretty good (score 3)
    c. Ok (score 2)
    d. not so good (score 1)

22. Did you take turns in talking and listening?
    a. right on (score 4)
    b. pretty good (score 3)
    c. Ok (score 2)
    d. not so good (score 1)

How did you show others that you were listening to them?
(Answer yes = score 2; ***no*** = score 1***)***

23. Nodded to show that you were listening.
    a. Yes
    b. No

24. Said 'That a good idea!" or "That's good" when you liked an idea.
    a. Yes
    b. No

25. Asked questions
    a. Yes
    b. No

26. Listened and tried to answer questions
    a. Yes
    b. No

27. Tried sometimes to add information to another members' thought or ideas.
    a. Yes
    b. No

28. Overall, how would you rate your group performance?
    a. right on (score 4)
    b. pretty good (score 3)
    c. OK (score 2)
    d. not so good (score 1)

Read each statement below. Rate your response from 1 (almost never happens) to 5 (almost always happens)

29. Group members give each other time to talk and make suggestions.	1	2	3	4	5
30. Group member treat each other nicely.	1	2	3	4	5
31. The ideas of others are important.	1	2	3	4	5
32. Group members often use the ideas of others.	1	2	3	4	5
33. Group members offer help to each other when it is needed.	1	2	3	4	5
34. Group members seek help from each other before asking the teacher.	1	2	3	4	5
35. Groups members feel free to talk and make suggestions.	1	2	3	4	5
36. Decisions are made by the group.	1	2	3	4	5
37. Groups members do the best they can	1	2	3	4	5

Role in the 7 small groups (in the SCL group)

- 1 = "Leader"
- 2 = "Recorder"
- 3 = "Checker"
- 4 = "Organizer"

The statements below indicate your opinion on the role assigned to you in the group discussion:

Choose **1** if you **strongly disagree** with the statement
Choose **2** if you **Disagree** with the statement
Choose **3** if you **Agree** with the statement
Choose **4** if you **Strongly agree** with the statement

38. The role I get enables me to discuss well	1	2	3	4
39. I cannot discuss well because my friend does not play their role as expected.	1	2	3	4
40. I like role assigning for each student in group discussion	1	2	3	4
41. My friends monopolize the discussion	1	2	3	4
42. Group discussion becomes better because of the role assigned to each student	1	2	3	4

List of Abbreviations

ATGW	Attitude towards group work
CL	Cooperative learning
DECS	Direct explanations of comprehension strategies
DG	Discussion group
EFL	English as a foreign language
ESL	English as a second language
GI	Group Investigation
IL	Individual learning
L1	First language
L2	Second language
QtA	Questioning the author
RC	Reading comprehension
RT	Reciprocal teaching
SCL	Scaffolding cooperative learning
SIL	Scaffolding individual learning
SRE	Scaffold reading experience
STAD	Students teams-achievement divisions
TGT	Teams-games tournaments
Voc	Vocabulary

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Samenvatting

In deze studie wordt onderzocht welke interventie, scaffolding of samenwerkend leren, het meest effectief is in het verbeteren van de leesvaardigheid en woordkennis van het Engels als vreemde taal van Indonesische studenten aan de Universiteit van Jambi. Verder wordt gekeken naar een mogelijk verschil in het effect van scaffolding bij studenten met een laag of hoog leesniveau en naar het effect van houding ten opzichte van groepswerk (Attitude Towards Group Work = ATGW), individuele verantwoordelijkheid en groepsdynamiek.

Gebaseerd op theorieen over scaffolding en samenwerkend leren vanuit een sociaal psychologisch perspectief is een semesterlang experiment uitgevoerd. Alle studenten hebben vooraf een leestoets en woordenschattoets gemaakt, gevolgd door drie interventiebehandelingen die afgesloten werden met een direct aansluitende leestoets.

Na de interventiebehandelingen hebben de studenten nog een eind leestoets en woordenschattoets gemaakt die zowel de overdracht van leesvaardigheden als de winst in woordenschat vaststelde. Er waren drie condities. In de eerste groep lazen de leerders de teksten individueel met behulp van scaffolding vragen. In de tweede groep lazen de leerders de teksten samen in groepjes van vier met behulp van dezelfde scaffolding vragen. In de derde groep lazen de leerders de teksten individueel met behulp van een woordenboek en vragen die ze zelf aan de docent mochten stellen als ze iets niet begrepen.

Er zijn verschillende statistische analyses uitgevoerd en de resultaten tonen aan dat scaffolding een overdrachtseffect heeft voor de verbetering van leesvaardigheid in zowel de individuele als samenwerkende condtities. Echter, studenten die in de individuel conditie hebben gewerkt tonen relatief meer verbetering. Het positieve effect van scaffolding is niet gevonden in de direct aansluitende leestoetsen. Dit suggereert dat scaffolding niet leidt tot een directe verbetering van leesvaardigheid, maar wel een overdrachtseffect kan faciliteren. Er zijn geen verschillen gevonden tussen de drie groepen in winst in woordenschat.

Verdere analyses laten zien dat studenten in beide scaffolding condities met een laag leesniveau relatief meer baat ondervinden van scaffolding dan studenten met een hoog leesniveau. Samenwerkend leren was niet effectiever dan individueel leren, maar binnen de samenwerkende groepen is gebleken dat een aantal factoren een sterke correlatie vertoont met een grotere winst in leesvaardigheid: een positieve houding ten opzichte van groepswerk, individuele verantwoordelijkheid en groepsdynamiek.

Concluderend heeft deze studie laten zien dat scaffolding van studenten een substantieel effect kan hebben op leesvaardigheid. In het bijzonder studenten met een laag niveau hebben baat bij scaffolding in zowel cooperative als individual learning. Bovendien zal de houding ten opzichte van groepswerk in overweging genomen moeten worden als één van de belangrijke factoren die bijdragen aan een goede leesvaardigheid in de huidige EFL context.

Summary

The main focus of this study is to examine the transfer and immediate effect of scaffolding in improving reading comprehension skills and vocabulary knowledge in cooperative and individual learning conditions. In addition, the differential effect of scaffolding on lower and higher ability students is examined to see whether the lower ability students benefit more from scaffolding with regards to reading comprehension and vocabulary gain than the higher ability students. Furthermore, possible correlations between Attitude Towards Group Work (ATGW), individual accountability, and group processing on reading comprehension and vocabulary gain are also investigated.

Guided by scaffolding and cooperative learning theory from social psychological views, two experimental reading comprehension classes who read treatment texts with the help of scaffolding questions were set up: a group with scaffolding in a cooperative learning condition (SCL) and a group with scaffolding in an individual learning condition (SIL). The students in the control group read the same texts and were encouraged to ask questions themselves and were free to use the dictionary or any other means that might help them understand the text. The students in control group had no scaffolding questions and are referred to as the individual learning (IL) group. All students took a pretest, three intervention treatments followed by immediate tests, and a posttest that measured a transfer of skills.

Several statistical analyses were conducted. The results revealed that a transfer effect of scaffolding was visible in the improvement of reading comprehension skills and gain in both the cooperative and individual learning condition, but the greatest effect was in the individual learning condition. However, an immediate effect of scaffolding was not discernible. This suggests that scaffolding does not provide a direct improvement of reading comprehension, but seems to facilitate a later transfer effect.

Furthermore, scaffolding provides a differential effect on reading comprehension gain for the lower and higher ability students in the SCL and SIL groups. Scaffolding does not provide a differential effect on the vocabulary retention of the lower and the higher ability students of the SCL, SIL, and IL

groups. This suggests that the lower students of SCL and SIL benefited more in terms of reading comprehension gain than the higher ability students, but this was not the case for vocabulary gain.

Next, within the cooperative learning condition ATGW has a strong relationship with reading comprehension gain, but not with vocabulary gain suggesting that reading comprehension gains may be influenced by ATGW. There is especially a strong relationship between individual accountability and reading comprehension. This suggests that an individual's contribution to the group is closely linked to gain in reading comprehension. Finally, group processing also correlates strongly with reading comprehension gain.

In conclusion, the current study showed that scaffolding provides substantial transfer and differential effects on the improvement of reading comprehension skills. In particular, scaffolding benefits the lower ability students in both the cooperative and individual learning conditions. In addition, in group work, attitudinal factors need to be considered as one of the important factors related to reading comprehension in the current EFL context.

Rangkuman (Summary Bahasa Indonesia)

Tujuan utama penelitian ini adalah untuk meneliti pengaruh skafolding (*scaffolding*), baik yang langsung (*immediate effect*) maupun tidak langsung (*transfer effect*) untuk meningkatkan keterampilan membaca pemahaman dan pengetahuan tentang kosa kata dalam kondisi pembelajaran kooperatif dan individual. Selain itu, pengaruh diferensial (*differential effect*) terhadap mahasiswa berkemampuan rendah dan tinggi juga diteliti untuk melihat apakah kelompok rendah lebih baik dibandingkan dengan kelompok tinggi dalam pencapaian membaca pemahaman dan kosa kata. Selanjutnya, keterkaitan antara sikap terhadap belajar kelompok, tanggung jawab individual, pemrosesan kelompok, serta pencapaian dalam membaca pemahaman dan kosa kata juga diteliti.

Penelitian longitudinal ini berpedoman pada teori belajar skafolding dan kooperatif dari perspektif psikologi sosial dengan dua kelompok eksperimen dan satu kelompok kontrol. Kelompok eksperimen memperoleh perlakuan skafolding secara kooperatif (*scaffolding cooperative learning=SCL*) dan secara individual (*scaffolding individual learning=SIL*). Kedua kelompok eksperimen ini membaca teks dengan bantuan pertanyaan-pertanyaan skafolding. Kelompok kontrol (*individual learning=IL*) membaca teks dengan memanfaatkan kamus tanpa bantuan pertanyaan-pertanyaan skafolding. Penelitian ini menggunakan skor pretes dan postes untuk mengukur pengaruh transfer (tidak langsung) keterampilan membaca pemahaman dan tiga tes langsung setelah perlakuan untuk mengukur pengaruh langsung dari perlakuan menggunakan skafolding dan nonskafolding dalam eksperimen.

Beberapa analisis statistik diterapkan dalam penelitian ini. Hasil analisis memperlihatkan bahwa, baik dalam kondisi belajar kooperatif maupun individual, skafolding memberikan pengaruh transfer dalam peningkatan keterampilan dalam membaca pemahaman. Namun, skafolding tidak memberikan pengaruh langsung terhadap peningkatan keterampilan membaca pemahaman. Ini mengisyaratkan bahwa skafolding lebih memberikan pengaruh transfer keterampilan dalam membaca pemahaman daripada pengaruh langsung.

Selanjutnya, skafolding memberikan pengaruh yang berbeda terhadap kelompok rendah dan kelompok tinggi dalam peningkatan hasil dan keterampilan membaca pemahaman dalam kelompok eksperimen. Baik dalam kelompok SCL maupun SIL, kelompok rendah memperoleh hasil lebih baik daripada kelompok tinggi. Kondisi serupa tidak terjadi pada kelompok kontrol. Ini menyarankan bahwa kelompok rendah dalam skafolding kooperatif dan skafolding individual lebih baik dibandingkan dengan kelompok tinggi dalam dalam pencapaian hasil membaca pemahaman. Namun, kondisi serupa tidak terjadi dalam pemerolehan kosa kata, baik dalam kelompok skafolding kooperatif maupun individual.

Selanjutnya, dalam kondisi belajar kooperatif sikap terhadap kerja kelompok bertemali erat dengan pencapaian membaca pemahaman, namun tidak berkaitan dengan pencapaian kosa kata. Pencapaian dalam membaca pemahaman mungkin dipengaruhi oleh sikap terhadap kerja kelompok secara kooperatif. Lebih lanjut, ada hubungan yang erat antara tanggung jawab individual dan membaca pemahaman, tetapi tidak ada hubungan dengan pemerolehan kosa kata. Ini menyarankan bahwa kontribusi individu dalam kelompok kooperatif bertautan erat dengan pencapaian dalam membaca pemahaman. Demikian juga dengan pemrosesan kelompok yang bertemali erat dengan pencapaian dalam membaca pemahaman.

Sebagai kesimpulan, skafolding memberikan pengaruh transfer dan pengaruh diferensial terhadap peningkatan keterampilan membaca pemahaman. Secara spesifik, skafolding sangat bermanfaat untuk kelompok mahasiswa berkemampuan rendah, baik dalam kondisi belajar kooperatif maupun individual. Lebih jauh, faktor sikap perlu dipertimbangkan sebagai salah satu faktor penting yang berkaitan dengan membaca pemahaman dalam konteks bahasa Inggris sebagai bahasa asing.

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